NATIONAL PETROLEUM NEWS

Rainbow Pool Brings Arkansas Boom; Development May Go Uncurbed

By Lawrence E. Smith
N. P. N. STAFF WRITER

EL DORADO, Ark., June 9

THIS town has once again become a hustling oil center. About 7 o'clock each evening the sidewalk in front of the Garrett hotel begins to fill and by 8 those who seek to pass must detour in the street.

Along the curb stand the men who are hunting jobs; filling the rest of the walk back to the hotel door are the drillers, roughnecks, truck drivers and other field men who are working. In the hotel lobby are the boys in the white shirts, trading royalties and giving each other information—some of it good—on drilling wells that are running high or low.

The evidence of a boom is chiefly discernible in the town. The field end of it is orderly enough at present and there is no congestion on the principal road to the Champagnolle, or Rainbow, or Lawson—locally they call it the Rainbow—field. The rainy season is past and it will be dust and not mud that will be the chief annoyance on the 10-mile trip to the field from El Dorado. It is that far, in a northeast direction.

The principal topic of speculation at this time is the test of Rovenger, in the SE NE NW of 10-17S-14W, about three-fourths mile northwest of production. Curiosity was satisfied Friday and those who took their courage in their hands and bought royalties around the well were trying to look as though they knew all the time what they were doing. The well came in for 280 barrels an hour at total depth of 3,246 feet.

There is nothing between it and other production to make it look like anything but an extension of the field. Three offsets are being drilled, one by the Ohio Oil Co., one by the Magna Producing Co. and one by the Skelly Oil Co. This well supplies the biggest sensation since the discovery came in.

That the boom is well founded is apparent from the status of the field as this is written. Fourteen of the deep sand wells are making around 26,000 barrels daily. The production up to this writing has exceeded 28,000 barrels two or three times. Of imposing initial output, the wells maintain their flow in good fashion, although agitation is necessary on several of them.

Naturally, the question which now arises is whether the field will continue its merry way unhindered by shutdowns, prorations or the other devices which have been employed in so many places the past year.

Offhand, and speaking for no part of the industry, I should say that if anything is done to whittle down the activity it will have been a triumph of faith over experience.

This field is one of those cut-up affairs, with 20 acres an average sized lease and much of it right in the heart of the proven area in the hands of local people who, judging by their actions, haven't heard the good tdings about conservaton.

The pine woods have their uses. Here is a steam-driven compressor used for flowing a water well, clamped to a tree

There are a few lessees who participated in the Smackover boom and who ran afoul of the department of justice in their promotions. They do not dominate, by any means, but they will be worthy of consideration.

Of major companies, the Ohio Oil Co. and the Pure Oil Co., discoverer of the field, are holders of large acreage and if the field carries on in the right direction, getting over to their acreage, orderly development will ensue. As yet the direction which the field will go is indeterminate. There is much excited gossip on this point and the scouts are daily implored by the pop stand proprietors to give them an inkling of the proper place to set up another stand.

Some preliminary moves are under way at this time among the larger operators of the Mid-Continent territory, seeking to slow down the Rainbow pool development, but no formal proposals have been made. Meantime the drilling increases in scope and intensity. On the latter point, an illustration is afforded by J. S. Rushing, a dentist of El Dorado, who has two producers on a 20-acre lease and is drilling four more. General Mid-Continent practice is to drill two on a tract of that size.

APPREHENSIONS as to field congestion do not appear well founded. With a large trunk line capacity from the old El Dorado and Smackover fields nowhere full and only a few miles of lateral line to lay to reach the new development, the field can easily be taken care of. Futhermore, the demand for crude in the Arkansas-Louisiana refining districts has been steady and there has been some shipping in of west Texas and Amarillo district oil. In addition to the large pipe line capacity, there is considerable empty steel storage in south Arkansas.

Root Refineries, Inc., is a large purchaser of the Rainbow pool oil. On a recent day total field produc-

Gauges on Rainbow Pool, Ark., Deep Wells, June 7 and May 31

Location	Company	Well No.	Farm	Sand	Prod. June 7	Prod. May 31
10-17-14	Pure Oil	1	Gregory-A	3140-80	2,965	4,356
11-17-14	Pure Oil	3	Gregory-A	3161-86	740	1,045
11-17-14	Pure Oil	5	Gregory-A	3172-3227	Off	....
15-17-14	Pure Oil	1	W. E. Gregory	3195-3210	3,480	4,447 (12 hrs.)
11-17-14	Pure Oil	1	J. M. Gregory	3248-51	530	715 (18 hrs.)
10-17-14	Murdock	2	Gregory	3154-3200	2,050	3,065
11-17-14	Rushing	1	Gregory	3192-3210	3,672	4,925
11-17-14	Rushing	2	Gregory	3196-3234	31	47
11-17-14	Magna	1	Dumas	3219-45	2,280	3,000
11-17-14	Magna	2	Dumas	3223-47	550	800
11-17-14	Magna	4	Dumas	3250-73	940	....
15-17-14	Lion O. R.	1	Rowland	3200-16	3,828	1,948
15-17-14	Lion O. R.	3	Rowland	3206-28	1,828	....
10-17-14	Hunt	1	Gregory	3210-33	2,880	4,241
		14			26,374	28,589

Note: June 7 report has two more wells than May 31 gauge.

tion was 27,000 barrels of which Root took 14,000. The company has a 6-inch line, looped part way with 4-inch and through this they can run about 30,000 barrels daily. Magnolia has two 4-inch lines running east of El Dorado and one 6-inch. One of the 4-inch lines takes care of the old East El Dorado field, one extends out to the Crain sand production in Secs. 1 and 2, of 17S-14W and the 6-inch goes from Secs. 11-17S-14W to tank farm on the Rock Island railway near Herma station, northeast of El Dorado. Magnolia could run about 30,000 barrels daily from the new field. Then the Lion Oil Refining Co. has a 4-inch line from its El Dorado refinery to the field.

Pure Oil Co. is shipping its production, formerly taken by Root, through Magnolia trunk line to the Pure's refinery at Smith's Bluff, Tex. The Root uses part of the oil it buys in the field in its El Dorado refinery and is selling to the Lion Oil Refining Co., the Kettle Creek Refining Co., El Dorado; Crystal Oil & Refining Corp., Shreveport, and Ouachita Valley Refining Co., El Dorado. In addition it sold 200,000 barrels for coastwise shipment to two purchasers, each taking 100,000 barrels. Delivery of this is being made by tank car. The first order was being filled at the rate of 5,000 barrels daily and delivery on the other was soon to begin.

The oil is of average 35.5 degrees A. P. I. gravity and yields around 35 per cent gasoline by straight distillation. Most of the wells make considerable gas, of yields ranging from 2.3 to 2.5 gallons a 1000 feet. Root Refineries, Inc., will install a gasoline plant immediately, having capacity of 10,000,000 cubic feet of gas throughput daily. Pure Oil Co. is reported to be considering the installation of a plant, but this is unconfirmed by company officials.

The field so far is confined to parts of Secs. 10, 11 and 15, Twp. 17S-14W, Union county. This county has the original El Dorado field, first oil field for Arkansas, which lies in Twp. 17, 18 and 19S-15 and 16W, and covering more than 13,000 acres. Then there is the East El Dorado field, in Twp. 17S-14W, the same township as the new Rainbow field. This covers about 2,500 acres, producing from the Nacatoch sand, which produces in the original field. Between the East El Dorado field and the Rainbow field, some three miles east there is no relationship. The former finds its production around 2,100-2,200 feet while the Rainbow production comes from sand about 1,000 feet deeper from surface and about the same footage lower in the stratigraphic column of this part of Arkansas. Thereby hangs an interesting tale.

Following the development of the El Dorado field, there was considerable wildcatting in all directions. Generally, the wildcats went down to the Nacatoch, found it barren, and stopped. The second phase of exploration, in a major sense, came with Smackover. The Nacatoch produced from around 2,000 feet; about 300 feet lower than the Nacatoch was found the Meakin sand and lower than these the Graves and Blossom sands, the latter being the deepest and found at 2,500-2,650 feet. Came, then, an era of wildcatting to the Blossom sand.

Along in 1922, the U. S. Geological Survey issued a press statement based upon work of W. W. Rubey, asserting that wildcatters were not drilling deep enough tests. It was asserted that the Nacatoch sand had been barren in some of the Louisiana fields which yielded important production from lower horizons. This was in April and Smackover's first oil well came in in July. A little later the Smackover operators were getting big production from the Blossom sand.

About a year ago discovery of oil in the so-called Crain sand was made near Champagnolle and a small pool was developed in Secs. 1 and 2 of 17S-14W. The sand was named for the owners of the farm on which the discovery well was drilled. These wells caused no particular flurry, although the Magnolia Petroleum Co. has one well in Sec. 1 which has scarcely varied from 280 barrels a day for months.

Moving southwest operators began to look for other producing spots. It was in offsetting a small Blossom sand well drilled by Garrett-Modisette that the Pure Oil Co. opened the new deep sand. Missing the Blossom production, the Pure went on and at 3140 feet picked up a horizon new to Arkansas. This discovery, located in the NE SE SE of 10-17S-14W, made 117 barrels the first hour on April 4. On June 7 its gauge was 2965 barrels.

The play started from there and at this writing there are 15 deep sand producers in the Rainbow field and 62 operations under way, some of them being rigs building or locations made, but the greater part actively drilling.

An interpretation of the log of the Pure's discovery well places the principally known horizons at the following depths from surface, the elevation above sea being 123 feet:

Sand	Depth
Nacatoch	2,120
Meakin	2,431
Graves	2,573
Upper Blossom	2,703
Lower Blossom	2,723
Woodbine	2,783
Crain	2,935
Gregory	3,140

The Gregory, or deep sand of the pool, has been so named from the lessor of the discovery tract. It consists of streaks of fine, loosely cemented sand, with gummy shale partings and production seems to be found in about three of these streaks, which are three feet and upward each in thickness. What is the limit of this productive zone is as yet unknown or what is below this zone, although conceivably some enterprising wildcatter may go on in this series and find still other sands.

The development of south Arkansas, therefore, enters upon its third phase. First there was the rather widespread testing of the Nacatoch sand, following El Dorado; then the testing of the Blossom, during and after Smackover and now the prospecting in the "red beds."

Close identification of the sand has not been made. However, geologists are inclined to place the productive zone in the thick Trinity group of Lower Cretaceous. The type of sediments drilled in the Rainbow field is shown in the following log, which is the Magna Producing Co.'s No. 1 Dumas, elevation 174 feet, in the SW NE NW SW of 11-17S-14W:

To	Formation
120	sand and clay
138	sand and gravel
205	sticky shale
230	sand
260	sticky shale
261	rock
279	sand
281	rock
360	sand
760	shale
570	sand
610	shale
611	rock
689	sand
690	rock
730	shale
731	rock
760	shale
761	rock
810	sticky shale and gumbo
830	sticky shale
831	rock
1020	sticky shale
1100	pack sand
1215	sticky shale

To	Formation
1290	shale and boulders
1291	rock
1300	shale
1305	rock
1345	pack sand
1346	rock
1385	sticky, limy shale
1410	gumbo
1411	rock
1450	sticky shale
1452	rock
1470	gumbo
1590	limey shale and boulders
1720	shale and boulders
1800	sticky shale and boulders
1825	limey shale
1930	shale and boulders
1966	chalk rock
1990	gumbo
2020	shale
2030	hard lime

To	Formation
2786	sandy shale
2790	sticky shale
2794	gumbo
2803	sticky shale
2812	sandy shale
2815	sticky shale
2823	sandy shale-cored
2830	sandy shale
2835	shale
2836	hard sand
2842	sandy lime
2846	shale
2855	sand
2859	hard, sandy lime
2864	oil sand
2870	shale
2880	hard sand
2887	gumbo
2897	sandy shale
2905	hard, sandy lime
2918	hard sand

*Above—Here are the scouts who cover the El Dorado district resting for a moment from their labors in the Rainbow field. Left to right, W. C. Smith**, Pure Oil Co.; D. A. Locke, Arkansas Natural Gas Corp.; J. T. McAteer, Gulf Refining Co.; H. O. Washington, Ohio Oil Co.; O. L. Haley, Roxana Petroleum Corp. and G. P. Brown, Pure Oil Co.*

***Of geological tendencies.*

To the right—Tank battery and Smith separators on one of the Rainbow pool leases

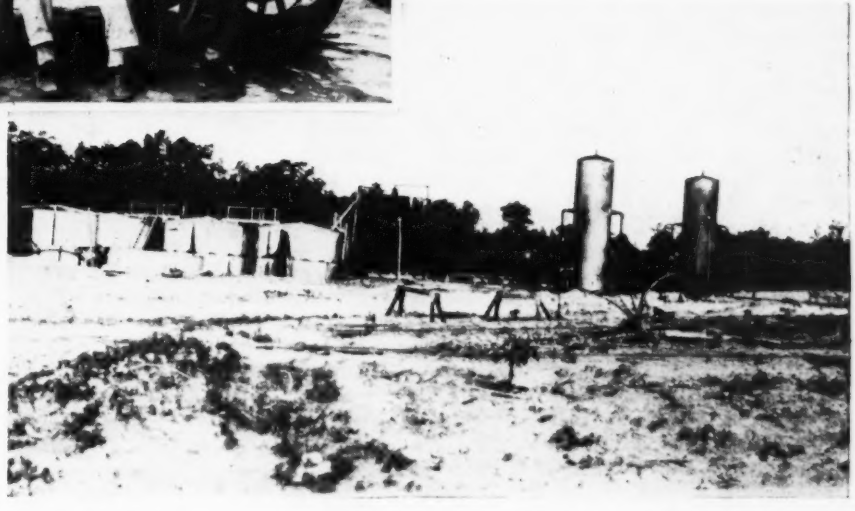
To	Formation
2075	limey shale
2100	broken lime
2138	tough gumbo
2145	hard lime
2190	hard, sandy lime and streaks of sand
2202	broken lime
2210	hard lime
2215	broken lime, gummy streak
2225	broken lime
2240	limey shale
2247	hard lime
2265	broken lime and streaks of shale
2285	broken lime
2305	lime, streaks of chalk
2345	tough gumbo
2400	hard, limey shale
2430	broken lime, sticky
2438	hard sand
2475	gummy lime
2476	rock
2490	sand
2492	sand rock
2515	chalk rock
2523	hard sand
2545	gumbo
2548	rock
2562	broken lime
2588	hard sand
2600	hard, sandy lime
2610	gumbo
2613	hard sand
2616	shale
2617	rock
2625	gumbo
2632	hard sand
2638	shale
2644	hard sand
2649	hard lime
2655	hard sand
2672	limey shale
2691	hard sand
2696	shale
2710	broken lime
2730	very hard lime
2760	hard sand
2770	shale
2774	sticky shale
2779	sand

To	Formation
2920	hard, sandy lime
2955	hard lime
2970	hard sand
2980	hard, sandy lime
2998	red bed
3004	red gumbo
3014	sand
3028	red gumbo and gravel
3050	red gumbo
3053	sand
3061	chalk—set 6 and 5⅛-in. at 3057
3065.5	oil sand
3068	red beds, lime streak—cored
3072	red shale-cored
3090	red shale, chalk, streaks of sand—cored
3094	red shale, streaks of lime—cored
3099	same
3104	red shale
3108	red shale, sandy streaks
3111	sandy shale, oil shows—cored
3114	shale, hard streaks, oil shows—cored
3118	sand and shale, oil shows—cored
3121	sand, traces of oil
3124	sand and red shale, trace oil
3126.5	sand and red shale, good oil in sand
3132	red shale, sandy streaks—cored
3140	sandy shale
3143	sticky shale
3156	hard shale
3218	sandy shale
3219	rock
3222	sandy shale, shows oil—cored
3225	red shale and sand show oil—cored
3227	red and blue shale—cored
3229	shaley sand and oil stain—cored
3233	sandy shale—cored
3238	shaley sand, oil stain—cored
3239	sand with little shale, good oil stain—cored

Set 4½-inch at 3219 feet.

Development problems in this field mainly concern the proper setting of casing. In a number of wells only one string—the 6⅝-inch—has been set, with the exception of the surface pipe. Extensive use of a formation tester has saved the use of other casing. The tester generally used is known as the Johnston well tester, invented by E. C. Johnston, of El Dorado, who with Blaine Johnston operates as contractor under the name Arkansas Drilling Co., Inc. This tester is a device which is made up on the drill pipe just like a fishtail bit, making up and breaking out in the usual manner. Its lower end fits into the "rat hole" drilled into the sand to test; next above is a tapered rubber packer; above that is a heavy coil spring and last a valve.

In operation, when the driller desires to make a formation test, instead of setting a string of pipe and cementing it, he reduces the hole, drilling a "rat hole" and runs in with the formation tester. The packer sets on the shoulder formed by reducing the hole and below the packer is that section of the tester which is perforated to permit whatever fluid is in the sand to enter the hollow tester.



The inside of the drill pipe has been kept dry as it was lowered through the mud into the hole because the valve in the tester does not open until the pipe rests and its weight compresses the coil spring, opening the valve.

The tester is permitted to remain in the hole for some suitable length of time, ordinarily 10 to 15 minutes. Then the driller throws in the clutch and picks up the pipe. Immediately the coil spring releases closing the valve so that whatever fluid is in the drill pipe is there confined and brought to the surface and can be measured.

For example, one drill pipe test which the writer saw, revealed that the pipe had filled up 92 joints, or

about 1,850 feet, with oil. Some of the wells tested have flowed through drill pipe. The device performs the same purpose as the Halliburton tester but is handled somewhat differently.

By the practice of using only one string of pipe to nearly the final depth of the wells and because of the soft formations, rapid time is made. An average of 45 days is estimated by some, but wells have been completed in 30 days. The Rushing No. 6 Gregory, for instance, drilled 2.100 feet in the first 72 hours. All drilling is with rotary and wells are completed that way.

Completion difficulties have been encountered in some of the wells because of the open hole between the bottom of the 6 and 5⅛-inch string and the pay. A good casing seat is difficult to find and water may break in on the sand.

An interesting completion job of this character is the No. 1 Rowland well, drilled by the Arkansas Drilling Co., interest in the lease being sold to the Lion Oil Refining Co. This well, in the NE corner of 15-17-14, set 6⅝-inch at 3192 feet and cemented with 200 sacks of cement, which was allowed to set 10 days. Top of the sand was 3,200 feet, leaving eight feet of red bed formation between the casing seat and the pipe.

The well was bailed and made oil for five minutes after which red mud and water came in. The sand was cored four feet and no water was found, showing the trouble was from above the pay. The total depth after coring was 3212 feet, thus, 12 feet of pay was exposed. The operators then started building back to set a string of 4½-inch in the pay. For this purpose they used empty cement sacks, about 275 of them being put in and tamped down with the drill stem. The hole was thereby plugged 8½ feet from bottom and upon this base the 4½-inch was set and cemented under pressure, using 75 sacks of cement. Three and one-half feet of pay sand were shut off by the pipe but after the plug was drilled out and the sacks removed, the well started off at 100 barrels an hour through a 1-inch choke. The chief trouble was that the well, in addition to making oil, also produced pieces of sacks for several days. From time to time a fragment would flow out, lodge against the choke and hold down production until it was forced on through.

Royalty trading has been brisk, the field having attracted buyers from distant points and prices as high as $1,500 base per acre have been paid. Lease trades have not been so numerous, but substantial prices have been paid in several instances. C. E. Murdock, of El Dorado, bought a 10-acre tract in Sec. 11 from Timberlake et al for $175,000, of which $40,000 was cash.

It offsets production. The SE NW 40 acres of Sec. 10 was sold by the Oilwell Corp., local operators, to the Skelly Oil Co. for $180,000, of which $40,000 was cash and balance out of oil. Semi-wildcat acreage at the time it was purchased, it is now proved by the Rovenger well in Sec. 10, Skelly having a direct offset drilling.

There are, as yet, no conclusive dry holes in hailing distance of the field. Several in the vicinity have been carried to 3,000 feet but stopped on reaching the red bed formations in which the Rainbow pool pay is found.

As remarked before, the Rainbow pool discovery puts a new appearance upon south Arkansas generally and this summer's campaign will be fairly extensive, unless some restrictive measures are worked out. At this writing nothing of the sort has reached farther than the desire of the strong operators whose vision extends farther than the present or is bounded by the Arkansas state line.

Field Similar to Noodle Creek Shows Up in Fisher County

HOUSTON, June 7

THE third and best well in the Fisher county area of central west Texas has been completed by Sinclair Oil & Gas Co., in its No. 1 Steele test, northeast quarter Sec. 72, H&TB survey, which is now producing about 560 barrels daily. Its maximum daily production when swabbed was 750 barrels daily at 3226 feet.

The Sinclair well is a south offset to the No. 1 Stephens discovery of The Texas Co. which was completed last January for about 150 barrels initial production. The Stephens well had pays in the Cisco series beds at 3236-3240 and 3250-3255 feet.

Two and a half miles north of east of the offsets mentioned a test of Cranfill & Reynolds, Inc., recently made a small well at 3106 feet. When drilled into the second pay the Cranfill & Reynolds test showed only water. It was then plugged back.

The three Fisher county wells are nearly 20 miles northwest of production in the Noodle Creek area of southwestern Jones county, which has been developed mainly by Phillips Petroleum Co. There pay horizons are also found in Cisco series beds but at a somewhat higher stratigraphic position.

Interest in the Noodle Creek area was recently quickened by the previously reported completion of a well two and a half miles north of earlier development by the Huconey Oil & Gas Co., in Sec. 14, Texas & Pacific Block 19. The Huconey well, after deepening to 2535 feet, made 735 barrels daily maximum production, declining to about 635 barrels daily.

The 25 wells in the Noodle Creek area, which has been under development about two years, average yields of about 59 barrels per well daily. The discovery well of the Phillips Petroleum Co., drilled in 1926, came in for 945 barrels maximum daily production. Total production of the field since that time has reached slightly in excess of 1,000,000 barrels.

Lacking gas pressure, virtually none of the wells in the Jones-Fisher county areas will flow; necessitating either swabbing practice or air life installations. Marland Production Co., which owns Noodle Creek producing properties, installed air lifts there early in the field's development. Besides the Marland and Phillips companies the principal other Noodle Creek operator is the Midwest Exploration Co.

Humble Pipeline Co., which operates a Panhandle-to-Ranger district system by way of Jones county, has trunk facilities within 15 to 20 miles of both the Noodle Creek and the Stephens-Steele developments. Spur line construction, it is reported, is soon to be started from the Humble's trunk facilities to the Fisher county area. Meantime, The Texas Co. has been shipping crude out by tank car from the small town of Royston, where it has a loading rack.

Fisher county crude, which is similar to that produced in the Noodle Creek field, is of slightly lower gravity. Laboratory tests showing physical characteristics of crude and yields of products are subjoined:

Tests On Fisher County Crude

	Texas	Cranfill & Reynolds
Gravity	36.0	35.0
Flash	—60	—60
Viscosity at 100′ Saybolt	50	50
Pour test	20	15
B. S.	.2%	.4%
Water	.1%	.2%
Tar	16.0%	16.0%
Sulfur	.58%	.54%
Color	Dark Brown	Dark Brown
Yields		
Gasoline	35.0%	35.0%
Gas oil	50.0%	50.0%
Fuel	14.0%	14.0%
Loss	1.0%	1.0%
Tests On Products (Gasoline)		
Gravity	55.9	54.9
L. B. P.	128	142
Per Cent at 221′	21.0	18.5
Per Cent at 284′	50.0	49.0
Per Cent at 392′	90.0	90.0
End Point	430	429
Recovery	98%	98%
Residue	1%	1%
Loss	1%	1%
Sulfur	.072%	.035%
(Gas Oil)		
Gravity	32.0	31.8
Flash	180	144
Pour	45	65
Viscosity at 100 Saybolt	63	58
Over at 500 Fht.	7.5%	6.0%
Over at 600 Fht.	46.0%	42.5%
Coke	.18%	.26%
(Fuel Oil)		
Gravity	13.2	13.4
Flash	560	580
Viscosity at 122 Furol	1036	1779

Field for Profit in Chassis Greasing Has Hardly Been Scratched

By Paul Truesdell
N. P. N. STAFF WRITER

NINETY per cent of the troubles automobile owners have with their cars are not due to poor engine lubrication, but to poor chassis lubrication—in other words lack of proper greasing.

This is the gist of the opinions of some half dozen of the country's authorities on automobiles—their construction and operation.

It is the views and opinions and experiences of these men that are set forth in this article.

In the first place, the engine is generally the longest lived part of the car. Given halfway decent care it is in fair shape and able to go when the rest of the car is ready for the scrap heap. This is largely due to the education of the motoring public as to engine lubrication, proper oils to use and proper intervals to change the oil.

When an engine does fail for lack of lubrication and has to be repaired the job is generally a bad one that costs the owner a lot of money. He doesn't forget it in a hurry. But where there is one repair job caused by burned out bearings or seizing of pistons, or anything of that kind, there are scores of small to medium sized jobs to be done to the chassis because it was half greased or neglected entirely.

The motorist doesn't have to pay much for them and so they don't make so much of an impression on his mind. He regards them as necessary evils attendant on owning a car. But the aggregate of such jobs runs to a surprising total, not only in money but in lost time and annoyance.

An automobile is like a man in some respects. The first signs of age are generally of a minor nature. The man's heart, lungs, stomach and major organs usually are not the first to give trouble. The first signs are a little stiffening of the joints, a little less flexibility of the muscles, a little slowing up in getting around.

It is the same thing with a car. The engine usually does not give any trouble. But various parts about the chassis begin to squeak or to rattle. The car is a little logy, maybe the rear axle howls at certain speeds, the gears are hard to shift. All these are likely to be signs that the car needs greasing.

If these preliminary signs are neglected, more serious trouble is likely. The noises increase, perhaps some part crystallizes or becomes "fatigued" and breaks. This may cause a dangerous accident or just an annoyance, according to what part fails, the speed at which the car is traveling and other conditions.

Spring leaves rusted together are likely to break. Shackle bolts sometimes wear until they deflect the springs and actually throw the body of the car out of true.

Specific parts of the chassis that suffer most from lack of lubrication attention are:

Front spring shackle bolts and bushings.

Steering knuckles and bushings.

Tie rod bolts and pins.

Brake riggings (especially 4-wheel brakes) rods, shafts, drag link ball and socket, clevises and clevis pins.

Rear end assembly.

Rear spring shackle bolts.

Wheel bearings.

Rear axle bearings—ball or roller.

These are just the main ones. There are many others. Doors often squeak or rattle because their hinges are not greased. Door handles and window elevators do the same for the same reason.

MOST of these parts are inexpensive as compared with engine parts. Many of them sell for only a few cents. But the labor charge of replacing them is considerable. In some of the older cars it is necessary almost to take the whole car apart to do the work. Sometimes replacement of parts that sell for $1.75 will cost $18 or $20. Regular and conscientious greasing would make replacements unnecessary in large part.

All these points could be brought out in advertising by the local jobber. He wouldn't have to stretch the truth a bit to gain his point and make the impression he desired.

He could, in fact, understate the truth and still make a perfectly good case that should and would sell many a motorist on the

Members of National Petroleum Association assembled in front of the office building of the Pure Oil Co. refinery at Marcus Hook, Pa., on the occasion of their tour of inspection May 25

necessity—if he would have the maximum use out of his car—of getting it greased regularly and greased right.

The advertising need not minimize in the least the value of using good oil in the crankcase and changing it as frequently as necessary. It could simply stress the additional need of attending to the hitherto more or less neglected greasing of the chassis.

Greasing nowadays is an art, calling for considerable skill, a whole lot of carefulness and honesty and the proper kind of lubricant. Real greasing is not a job that can be done by any Tom, Dick or Harry with a pressure gun. This fact could well be impressed on the motorist through advertising and sales work of the local company.

The same tendency in automobile design that is making new demands, as far as fast cars are concerned, for crank case oil, is also making increased demands for proper greasing of the chassis. Higher speeds set up greater stresses and strains in the chassis parts as well as in the engine, and call for better lubrication.

The ordinary cup grease such as was common a few years ago is out of it now as a chassis lubricant. Some cars have such tight fits in spring shackles and so on that a stiff grease cannot be forced through and it would not give the right kind of lubrication if it could.

MOST refining and compounding companies as well as some of the companies making pressure grease gun equipment are turning out greases specially designed to meet the needs of the latest automobile chassis. Most of the companies making grease guns are glad to take men sent by oil companies and give them a few weeks' training in the proper handling of greasing equipment and chassis lubrication, to properly fit them to go into greasing pits.

Conversation with automotive engineers brings out the fact that chassis lubrication is one of their major problems. They design a chassis so it can be properly lubricated, put on adequate grease cups or grease fittings where they will do the most good—and nowadays generally where they are accessible too—but they cannot make the buyers of their cars keep them lubricated.

Installation of "one-shot" lubrication systems on some cars was mainly an attempt by automobile engineers to use some kind of device that would cause the ordinary motorist to pay some attention to chassis lubrication. Most engineers believe that the one-shot system is not likely to become general and do not look on it with favor, preferring the pressure greasing system.

Most of the automobile manufacturers try to have their dealers and branch service departments maintain good greasing service and some of them do but many of them privately admit that it is a hard task to keep the greasing service up to what it should be.

So it is very likely that all efforts that jobbers might make toward educating the motorist to have his car greased regularly and properly would have the earnest support of the automobile manufacturers. In one case where a jobber went into the greasing business on an extensive scale, the local distributor for a well known make of car shut down his own greasing department and sent his customers to that jobber.

The dealer had found that it was hard to get good men for the grease racks, he had all the work he could handle in straight repairing and service and he was glad to turn this work over to the jobber when he knew it would be well handled.

Even where the automobile dealers in a town do handle greasing service, they are often glad to let it go to a jobber who does it well because for some reason, the dealers' service departments regard greasing as a curse in most instances.

So it seems that chassis lubrication is particularly the field of the local marketer or the company operating stations in a restricted territory, and it seems that it is a field that is capable of and worth, intensive cultivation.

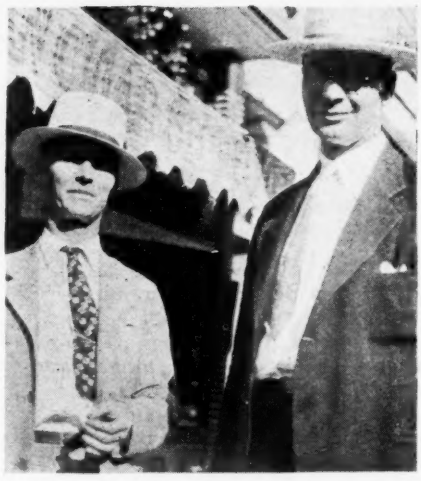
Petroleum Accountants Elect Officers

LOS ANGELES, June 8.—The third annual meeting of the Petroleum Accountants Society of California was held May 24, at the Commercial Club, Los Angeles. J. H. Rounsavell, A. McNab, and B. B. McBride were elected directors for three years to succeed retiring directors.

The board of directors consists of: Wesley Cunningham, General Petroleum Corp.; R. E. Ecke, Wilshire Oil Co., Inc.; M. G. Kerr, Union Oil Co.; B. B. McBride, Continental Oil Co.; A. McNab, Pan American Petroleum Co.; A. J. Olmsted, Chanslor Canfield Midway Oil Co.; R. J. Pagen, The Texas Co.; J. H. Rounsavell, Signal Gasoline Corp., and J. S. Wallace, Richfield Oil Co.

The following officers were unanimously reelected: Wesley Cunningham, president; M. G. Kerr, first vice-president; A. J. Olmsted, second vice-president, and R. E. Ecke, secretary-treasurer.

The outline of the meetings for the coming year includes the presentation and discussion of subjects of current interest, as well as special problems confronting its members. It is also contemplated that definite steps will be taken to further standardization of accounting forms and accounting methods with the object in view of simplification and economy to each company involved.



G. N. Larson, left, assistant to Warner Clark, right, southern district manager of the California Co., Dallas

Dallas Southern Base For California Co.

HOUSTON, June 7.—G. N. Larson has been transferred from the Rocky Mountain territory to be assistant to Warner Clark, Southern district manager of the California Co., with Dallas headquarters.

The California Co., which is the Rocky Mountain and southwestern subsidiary of the Standard Oil Co. of California, maintained southern district headquarters at Colorado, Texas, until June 1, when they were removed to the Marvin building, Dallas. Operations in Texas, Oklahoma and New Mexico come under the southern district.

Besides Messrs. Clark and Larson the following personnel will hereafter make headquarters at Dallas:

B. L. Laird, superintendent, A. J. Cunningham and James M. Charlton, of the land and leasing division; Leonard W. Orynski, geologist in charge, E. R. Wall and A. R. Crooks of the geological department; C. V. Lane, purchasing agent; E. Z. Deadrich, cashier.

Clerical help will bring the total of the Dallas office personnel to about 20.

A field office will continue to be maintained at Colorado, Texas, in charge of William Simpson, superintendent.

Sells Lucky Four Gasoline

GRAND RAPIDS, Mich.—Thomas & Cornell is the new name of the company which purchased the Lighthouse Gas & Oil Co. here. The company is incorporated for $50,000. It handles Lucky Four gasoline and oil and has as its emblem a four leaf clover. Headquarters are on Picric Acid road.

In a recent newspaper advertisement, a four leaf clover designating quality, power, service and mileage, was used to illustrate the merits of the company's gasoline. "It stands the test, it is the best, four leaves will tell," is the way the company said it.

High Explosives for Well Shooting Oil Discussed Before A. I. M. E.

TULSA, June 9

OIL operators must learn to study the oil sand which they are preparing to shoot, and use the type of explosive best adapted to its needs. Both M. M. Kinley, oil well shooter, and C. O. Rison, of the Indian Territory Illuminating Oil Co., stressed this in their talks before the Mid-Continent section of the American Institute of Mining & Metallurgical Engineers which met June 7 to discuss oil well shooting and the manufacture and use of high explosives.

Before settling down to the business of the meeting, the last to be held this summer, those present endorsed the candidacy for president of the United States of their brother engineer, Herbert Hoover.

C. V. Millikan, chairman, who presided, announced that H. Foster Bain, general secretary of the Institute, was expected in Tulsa June 14. Tentative plans for his entertainment, including a meeting of the local executive committee, and an informal dinner, were discussed.

To be effective, an explosive must of necessity be destructive. In spite of this fact, operators have not demanded the full safety factor to which they and their employes are entitled. Mr. Kinley said that to obtain greater safety he favored the use of gelatin rather than nitro-glycerin for oil well shooting. In arguing the other side of the question, Mr. Rison maintained that greater care should be taken in the manufacture and handling of nitro-glycerin to lower the toll of lives it exacts every year.

Both speakers were agreed that the greatest danger in handling either explosive lies in friction. Mr. Rison said it is the opinion of many experts that numerous premature explosions, not to be accounted for in any other way, resulted in faulty manufacture. A hurried mixing of the glycerin with the acid, resulting in imperfect nitration of the solution, left some parts of the "soup" more susceptible to heat than others, so that a small increase in temperature would set off the explosive.

In giving his reasons for favoring gelatin as an oil well shooting explosive, Mr. Kinley told of experiments he had made in California by dropping gelatin from an airplane. Ten quarts, dropped 1200 feet, did not explode.

As is the case with any solid explosive, detonation of large quantities presents the greatest problem. There have been many cases of part of the charge being blown out of the hole without going off. For this reason a series of detonators, consisting of fulminite of mercury caps, set in capsules filled with T.N.T. are placed at intervals in the shell. Eighteen inches is the maximum distance gelatin will detonate itself. There have been numerous instances of part of a charge of gelatin being blown out of the hole by the explosion of the rest of the shot.

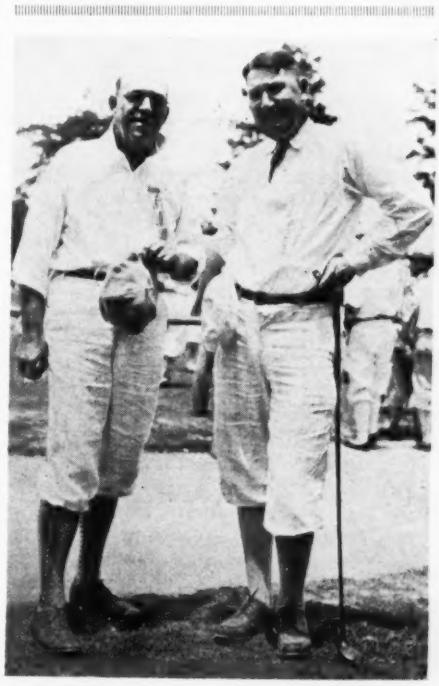
Mr. Rison said that much of the danger resulted from friction, as the shot of nitro-glycerin was lowered into the hole, could be eliminated by the exercise of greater care on the part of the shooter. Being highly sensitive, a few drops of nitro which might have leaked on the outside of the shell, might easily be exploded from rubbing the casing setting off the shot and ruining the well and possibly the shooter. It is good practice to wash off the outside of the shell before running it. Either alcohol or ether should be used, as water has no effect on nitro-glycerin.

Care must be taken to keep the explosive from the direct rays of the sun, as nitro-glycerin explodes at a comparatively low temperature, 118-120 degrees F.

In the usual small plant built to manufacture nitro-glycerin for oil well work exclusively, the formula used is roughly 100 parts of ordinary glycerin, 270 parts of 94 per cent nitric acid, and 450 parts sulphuric acid. The manufacture is a comparatively simple process, the most important part being to make sure the solution is perfectly nitrated. This is accomplished by keeping the agitation continuous during the mixing. Drowning vats are provided under the mixing vats so that should the agitators stop for any reason during the process, the mixture can be dumped into a cool water bath, thus possibly preventing an explosion.

Nitro-glycerin is not a new explosive. It was discovered in 1846 by a European scientist, who named it trinitro-glycerin. The development of "blasting oil," as it was popularly known, has been accomplished by many disastrous explosions. So frequent did these explosions become that ship-owners early refused to carry it. This action led to the inception of the nitro-glycerin industry in this country, a European manufacturer importing an experienced crew of workmen to this country to operate his plant.

The first factory for making nitro-glycerin for the use in oil well shooting was built at Church Run, near Titusville, Penn., in 1868. It has played a big part in developing the resources of the country other than oil, being used in building railroad right-of-ways, quarrying and the like.



Arch M. Bowman, (left), the newly elected president of the National Association of Purchasing Agents, is shown talking to Carl A. Young, Dallas, standardization director of the American Petroleum Institute

Consider Restrictions In Little River

TULSA, June 11.—The Oklahoma Corporation Commission has issued a call for a hearing to be held on June 15, to consider the issuance of an order regulating drilling and production in the Little River field of Seminole county.

It is proposed, in brief, to hold drilling to two wells to each 40 acres with none completed until Aug. 15 and after that date to restrict production to 1,600 barrels to each 40 acres. Drilling would not be restricted after Aug. 15, but new wells starting on or after that day would have completion date of Nov. 1.

Some objection is anticipated at this hearing. Meantime much equipment is being moved into the field and preparations made to start 60 to 75 wells on June 15, terminal date of the present agreement.

Louis Carruth Celebrates Golden Wedding Anniversary

CLEVELAND, June 9

THE fiftieth wedding anniversary of Louis Carruth, president of the Canfield Oil Co., and well known in refining circles, and Mrs. Carruth was celebrated June 4. There was an anniversary supper at the Randall tavern, Painesville, Ohio.

Mr. Carruth's married life and his career with the Canfield Oil Co. is linked with the development of Cleveland. Nine years after his marriage to Frances Massey, on June 4, 1878, Mr. Carruth joined the Canfield organization.

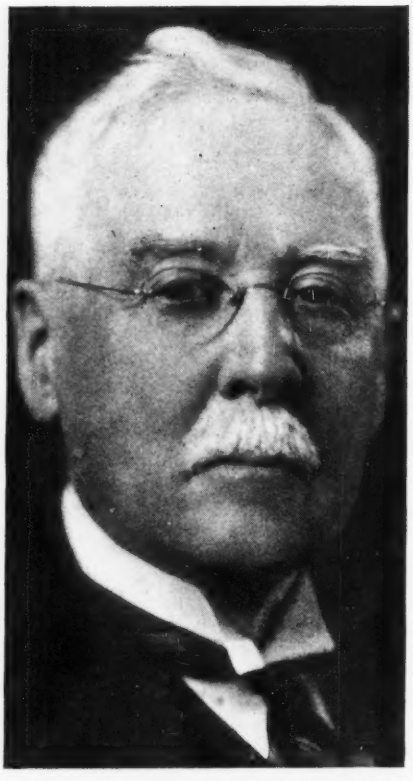
He lived then at 1678 Wilson ave., now E. 55th st., near Francis st. There was no cross town car line and no E. 55th st. bridge across the valley as now. Mr. Carruth walked or drove a horse and buggy to his office.

Wilson ave. then was one of the finest residential streets and the Canfield office was in the eastern suburbs of Cleveland. The fine old homes on the former Wilson ave. have reached now the development of a garage in the rear, second hand automobile junk yards on the front lawn with the building used for a rooming house.

Mr. Carruth in 1900 purchased a new home on Euclid ave., near Cornell rd., just east of Cleveland's university center and more than twice the distance from the retail section than was his Wilson ave. home. In 1922 he purchased his present home at 2508 Wellington rd., Cleveland Heights. So in all Mr. Carruth has lived in only three homes during this 50-year period.

Mr. Carruth's entire immediate family was with him to celebrate his golden wedding anniversary. The children present were William M. Carruth, the older son, a professor in Hamilton college, New York, and his wife; H. M. Carruth, secretary of the Canfield Oil Co., with his wife and two children; and a daughter, Alice Carruth.

The entire Canfield Oil Co. organization extended congratulations to Mr. and Mrs. Carruth.



—Frank Moore Photo

LOUIS CARRUTH
President of the Canfield Oil Co., who celebrated his golden wedding anniversary

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Australia to Have Gasoline Plant

LOS ANGELES, June 11.—The first absorption plant for Australia was recently shipped by C. F. Braun & Co., of Alhambra, Calif. The equipment consisted of a modified type D portable designed to extract between 4000 and 5000 gallons of natural gasoline a day. This outfit goes to a point about 150 miles from Brisbane, Australia, where a well has been completed making sufficient gas to justify the installation of a small plant.

Model Gasoline Tax Law Is Aim of Officials

CHICAGO, June 9.—Formulation of a model gasoline tax law suitable for adoption in any of the United States, is the primary object confronting the North American Gasoline Tax conference which convenes for its third annual meeting the first three days of October in Memphis at the Peabody hotel.

This has been one of the aims of the conference since its formation in St. Louis about three years ago. At first an effort was made to effect a uniform rate of gasoline taxation throughout the country, but that was given up the first year as impractical. Now they hope to write a bill that provides, among other things, uniform methods of execution.

At present, some gasoline tax laws levy a tribute from the motorists of the state for the use of the highways and measure that use by the amount of gasoline each motorist buys. Other states levy a sales tax upon the oil jobber and permit him to pass the burden along to his customers at so much a gallon. And there are several other less common forms.

Some bills allow exemptions from the tax to the principal voting class in the state. In Kansas the farmers do not have to pay tax on the gasoline used in tractors and in Pennsylvania the manufacturers do not have to pay tax on gasoline used in their mills. These conflicting interests and political situations the tax experts also hope to harmonize.

Some gasoline tax laws allow the oil man a 1 to 4 per cent shrinkage, tax free, and some do not. An effort will be made to devise a bill that will make the shrinkage allowance uniform all over the country. And above all, the tax administrators want a bill that will be uniformly constitutional wherever passed.

At the 1927 conference in Columbus, O., a committee was appointed to write the model law, but none has been produced so far.

West Virginia Marketers To Consider Code

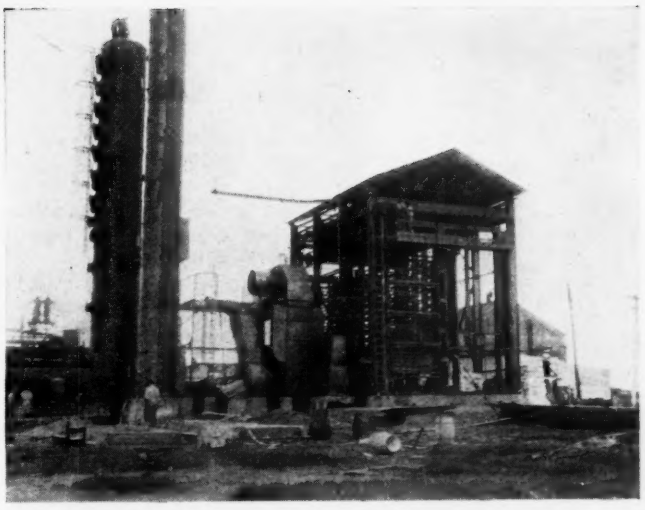
CHARLESTON, W. Va., June 11.—The West Virginia Oil Marketers Association will consider a code of ethics at its annual meeting at the Kanawha hotel, Charleston, June 14 to 15. This code, according to W. Walter McKee, Elk Refining Co., president of the association, is like the Ohio code which will become effective June 15. W. A. Milne, executive secretary of the Ohio Petroleum Marketers Association, will address the convention here on association work and the code of ethics.

Other features of the program are: Frank W. Lovejoy, Vacuum Oil Co., on "The Filling Station of the Future;" John Mather, manager of the domestic distribution department, United States Chamber of Commerce, Washington, on "Present Day Trends in Distribution;" C. P. Fortney, chairman of the West Virginia state road commission on "Good Roads and Gasoline Consumption;" H. C. Mougey, General Motors Research Corp., Detroit, on "Lubrication of Automobiles;" R. E. Hare, general superintendent of stations, Tri-State Refining Co., Kenova, W. Va., on "Futility of Price Wars," and R. B. Johnston, West Virginia department of agriculture on "Advertising West Virginia Scenery." The topic of James A. Gilmore, secretary of the American Oil Men's Association, Chicago, has not been announced.

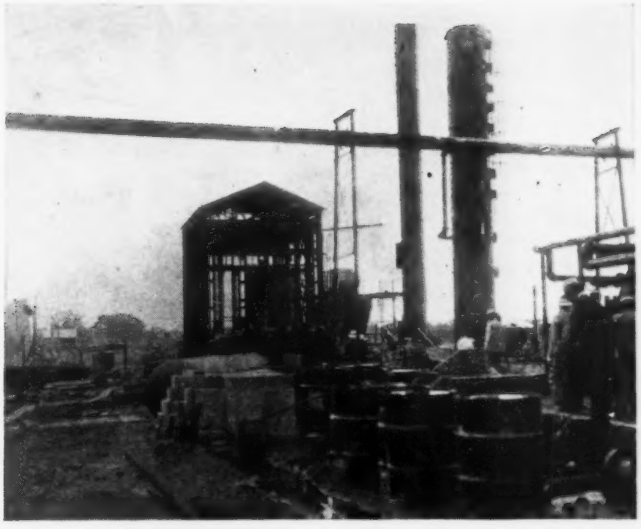
The marketers will visit the refineries of the Elk Refining Co. at Falling Rock and the Pure Oil Co. at Cabin Creek.

A banquet and golf at the Kanawha County Club will round out the social part of the meeting.

CLEVELAND, June 11.—The fourteenth annual meeting of the American Association of Geologists will be held March 21, 22, and 23, 1929, in Fort Worth, Texas.



Refiners at the Shreveport meeting inspected the new 7,500-barrel pipe still being installed at the plant of the Shreveport Producing & Refining Co. Inc. Two views of the same plant taken from different angles



Weld Cracking Chambers Slowly

By J. C. Chatfield
N. P. N. STAFF WRITER

SHREVEPORT, June 11

TO INSURE final strength after welding cracks and test holes in cracking chambers refinery operators at the semi-annual technical meeting of the Western Petroleum Refiners Association were warned to deposit metal slowly by Prof. T. McLean Jasper, director of research for the A. O. Smith Corp.

Professor Jasper told of one refiner who started out to weld an opening in a cracking chamber after he had determined to change the location of a certain connection. In order to speed up the work he had two welders on the job, one working inside and the other outside the chamber. The result was that the metal was deposited quickly, the weld was hot when completed and the metal adjoining the weld was raised to a rather high temperature. When the weld cooled a large crack developed around the weld on account of shrinkage. When the next weld was made the refiner demanded that the welder lay off and smoke a cigarette after depositing a layer of metal.

When a line from a reaction chamber must be changed Professor Jasper recommended to the refinery superintendents that they merely cut off the old line at a short distance from the shell and securely close it rather than to make a large weld in the vessel.

Asked about welding cracks in old cracking chambers the speaker recommended that the cracks be chiseled to the bottom before the welding is begun. In case a cutting torch is used to open up the cracks the walls of the cracks should be chiseled before welding. The same recommendation of slow welding was made on repairing cracks and on filling up test holes bored to check the progress of corrosion.

The discussion of repairs and maintenance of cracking chambers followed a paper on the design of pressure vessels presented by Professor Jasper. The annealing of chambers after repairing was brought up and refiners were advised that this might be done by filling the vessels with hot oil and maintaining the temperature for a certain length of time without exerting pressure.

At the A. O. Smith plant at Milwaukee Professor Jasper stated that annealing was done in a special oven built at great expense. In this oven an entire cracking chamber is raised to 1150° F. in about 2½ hours and kept at that temperature one hour for every inch of thickness in the walls of the vessel. It is then put in a special cooling chamber and cooled slowly. He reported that the vessels could not be raised to extreme annealing temperatures because of the tendency for the vessels to change their shape.

A forecast was made that in the future the industry may demand chromium plated vessels to resist corrosion if there is a consistent growth in the percentage of corrosive crudes produced. Professor Jasper reported that the demand at present is not sufficient to warrant the building of such an expensive plant. Mention was made of the experiments which have been made by one company in plastering chamber interiors with a special cement. In small draw-off lines chromium plating now is being used successfully.

Looking into the future Professor Jasper asked the refiners to give him an opinion as to whether cracking plant equipment manufacturers will be required to build vessels to stand much higher pressures than those now in use. L. R. Crawford, chairman of the manufacturers' committee of the association, told Professor Jasper that higher pressures might be desirable in case of an extended crude shortage but offered some comfort in the statement that the industry probably will be contented with smaller chambers to compensate for the higher working pressures.

W. R. Hounsell of the Houston Oil Co., found it impossible to attend the refiners' meeting and present his paper on treating cracked gasolines continuously with acid. There was a general round table discussion of treating involving both the use of acid and Gray towers and a combination of the two methods.

C. E. Isaacs, assistant superintendent of the Marland Refining Co., reported that at their plant Dubbs pressure distillate is treated with small quantities of acid before charging to the Gray towers. He presented the theory that losses through the Gray tower are minimized by a polymerization of some of the fixed gases into liquid gasoline, partly compensating for the loss in liquid gasoline through polymerization.

J. B. Edwards, general manager of the White Star Refining Co., Wood River, reported that he is making a series of extended tests to show which is the most economical method of

L. D. MANN'S PAPER

The paper of L. D. Mann, Empire Oil & Refining Co, entitled "Reduction of Losses in Refining Offers Profits," which was read at the Shreveport meeting of the Western Petroleum Refiners Association, will be published in National Petroleum News for June 20.

treating Dubbs pressure gasoline. After a period of straight Gray treatment he has now gone to an acid treatment. Later he will test a combination of the two.

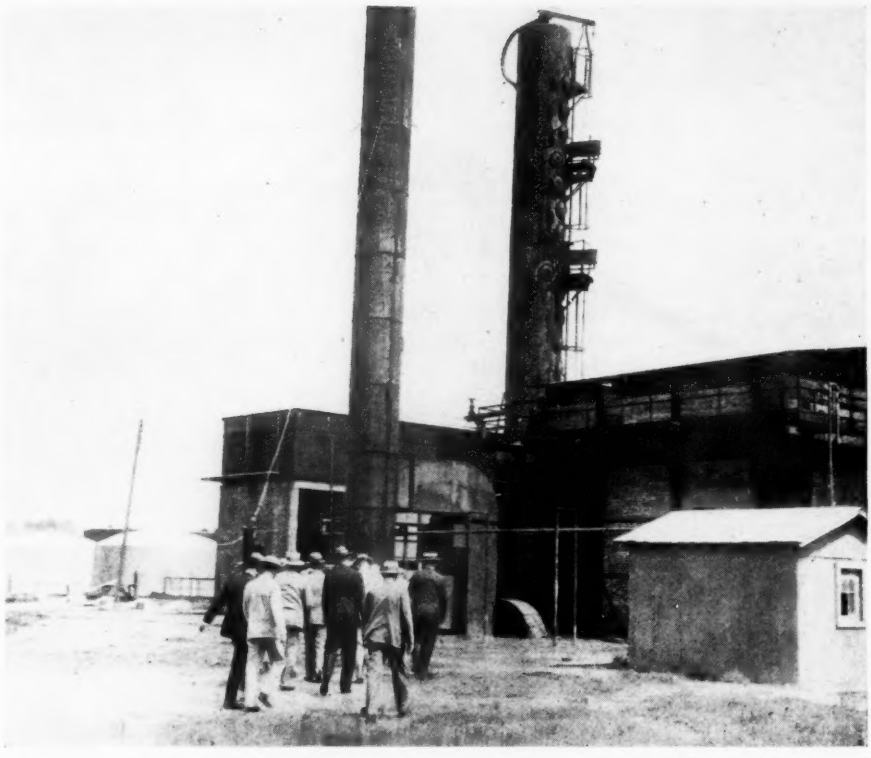
At the request of the refiners M. E. Foster of Phillips Petroleum Co. described the characteristics of some of the new special grades of natural gasoline such as the butane-free product which has an initial boiling point of 93° F. and upwards, and A.P.I. gravity of 77 and a distillation recovery of 98 with the bath at 60° F. He stated that a tank of this grade was stored in Oklahoma through the three hottest months of last summer with a loss of only 5 per cent, although the tank was not vapor tight.

In addition to the use of this product as an airplane fuel Mr. Foster said it was being used as a blending material by some refiners who have come to the conclusion that they are making approximately as much butane as they can use in their finished gasoline through processing uncondensed vapors from their cracking plants, crude tanks and skimming stills.

Following the morning session of the technical men June 4, they visited refineries in the Shreveport district. At the plant of the Crystal Oil & Refining Corp. the refiners were interested in the methods used by J. J. Thomas in fighting corrosion and aiding in treating the gasoline produced from various crudes mixed on a 50-50 basis with west Texas oil.

At the Crystal plant caustic is charged to the stills with the oil at the rate of about 2 barrels per hour. This makes a mixture of 48 barrels of caustic to 10,000 barrels of crude each 24 hours.

Anhydrous ammonia is injected into the vapor lines by a manual operation.



Inspecting pipe still used for producing cracking stock from a mixture of Texas, Arkansas and Louisiana crudes at the Crystal Oil & Refining Corp.'s plant

This is at the approximate rate of one pound to 3,000 barrels of crude run to stills. Streams are tested every 30 minutes with potassium ferrocyanide and just kept from going blue.

The composite gasoline stream of the plant is washed with lime in a special tank before being run to working storage. This tank is charged each morning with about 800 pounds of hydrated lime. An additional 600 pounds is added after about 12 hours of run.

A steam pump is used at the lime wash tank to circulate a mixture of lime and gasoline so that there will be proper contacting. The lime treatment has reduced the amount of sulfur in the gasoline and has resulted in a saving in the amount of sulfur needed in sweetening. The average saving has been 50 pounds of flowers of sulfur per thousand barrels of gasoline treated.

In the three months' period that the Crystal plant has been running an average of about 5,000 barrels of Winkler county, Tex. crude per day mixed with 5,000 barrels of Smackover and other Arkansas and Louisiana crudes. Mr. Thomas has observed no corrosion in his equipment as a result of the caustic, ammonia and lime used.

At the plant of the Shreveport Producing & Refining Corp. the visitors were interested in a new 7,500 barrel pipe still which is in progress of construction. The still is to be used in the production of cracking stock from crude which will be stripped of light ends in the shell still battery.

The visit of the refiners to the Bossier City cracking and asphalt plants of the Louisiana Oil Refining Corp. was cut short by a rain. The cracking plant consists of nine units of the Tube & Tank process, a rerun battery and a treating plant.

L. S. Cannon, assistant chief chemist, and C. E. Isaacs, assistant refinery superintendent of the Marland Refining Co.

RICHMOND, Va., June 9.—At the request of the board of health, the mayor of Buena Vista, Va., has been instructed to have waste motor oil spread on all stagnant ponds and other breeding places for mosquitoes in the city.

Humble's Engineering Work Reorganized

HOUSTON, June 11.—Reorganization of engineering work in the Humble Oil & Refining Co. has resulted in changes whereby separate divisions have been created to take the place of a previously centralized department.

Walter W. Scott, who had been in charge of petroleum engineering for the Pure Oil Co. at Tulsa, assumed similar duties with the Humble June 1. He is in general charge of field and mechanical engineering work.

S. W. Oberg, formerly Gulf Coastal division engineer, now is in general charge of the Humble's civil engineering and mapping work.

Frank A. Watts, formerly assistant chief engineer of the consolidated department, now heads all construction engineering for the sales department.

J. C. Robertson has taken over all engineering work dealing with terminals, harbor development and similar duties, reporting to Humble Pipeline Co.

Refinery engineering, which has always been handled separately from work of other departments, continues as in the past.

The reorganization followed the recently announced resignation of Rex G. Hamaker, as chief engineer of the consolidated department, to head research work for the Reed Roller Bit Co., Houston.

Messrs. Scott, Oberg and Watts are graduates of Leland Stanford University, Palo Alto, Calif., graduating, respectively, in 1916, 1917 and 1919.

After leaving school, Mr. Scott was geologist and engineer for the Shell Co. of California two years. Then he was in charge of drilling operations in Texas and Louisiana for the Hamilton Oil Corp., Houston, for three years. He joined the United States Bureau of Mines in 1921 as deputy supervisor in the public lands and leasing division, serving both in Rocky Mountain and north Louisiana territory. In 1924, he went with the Anglo-Saxon Petroleum Co., supervising engineering work at Miri, Sarawak. Returning to the United States about a year later he served the Bureau of Mines briefly as superintendent of the Bartlesville experiment station before resigning to join the Pure Oil Co.

Mr. Oberg served in the United States army from 1917-1919 after which he was in the United States Reclamation Service from January to October, 1919. He joined the Humble as surveyor in the Ranger territory in October, 1919. From 1920-1922 he served as Cisco division engineer before being transferred to the Gulf Coastal division at Houston.

After Mr. Watts' graduation from Stanford he was an engineer for the Union Oil Co. of California in the summer of 1919. Then he joined the Humble as Cisco division assistant engineer. He was made assistant chief engineer at Houston in 1921.

Above—L. R. Crawford, vice president of the Producers and Refiners Corp., who acted as chairman of the semi-annual meeting of technical men, with Howard Bennette, managing director of the Western Petroleum Refiners Association, at the Shreveport meeting, June 4

At the right—J. A. Sartori, general superintendent of refineries for the Producers & Refiners Corp., and J. B. Edwards, general manager of the White Star Refining Co.

Lawyers Still Fencing In Stewart Trial

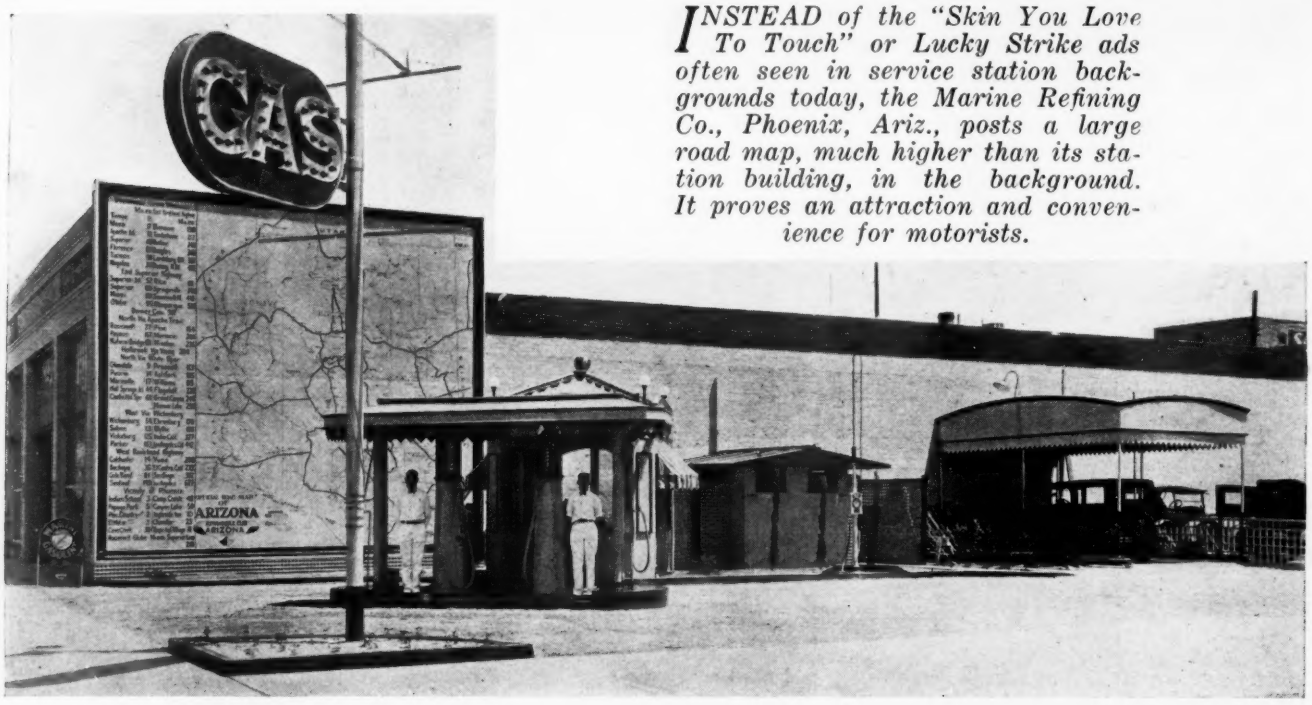
WASHINGTON, June 11. — The whole of last week was spent in the trial of Col. Robert W. Stewart in controversies among the lawyers over law points raised by them. Broadly speaking the judge ruled against every contention made by the Stewart lawyers.

For instance, the Stewart lawyers contended that there was no quorum of the Senate committee present when the questions which Stewart did not answer at the time were asked. Oral testimony showed, what every newspaper correspondent knows to be the fact, that not more than two or three senators were present at any one time. Yet the judge allowed the record of the committee showing a quorum present to stand as the fact of the matter. It was brought out that senators were counted as present if they answered telephone inquiry about themselves.

Another point was that the questions put to Col. Stewart were not questions framed by the senator but a newspaper man whose curiosity was aroused to a keener point than that of the senators. Another was that the questions were judicial and not legislative; that is to say, that inquiring of Col. Stewart as to whether he had talked with Harry F. Sinclair about the Continental Trading Co.'s bonds or as to whether he knew of anyone who had received such bonds was not to ascertain facts that would help the committee in recommending legislation but might be useful in a judicial proceeding to determine the ownership of the bonds or something of that sort.

HyVis Gets Detroit Distributor

CLEVELAND, June 11.—The distribution of HyVis motor oil in Detroit territory has been undertaken by the Great Western Oil Co., Cleveland. HyVis is a product of Fred G. Clark, Inc., Cleveland and has been marketed nationally since 1920. It was the first Pennsylvania motor oil to advance a national 35-cent a quart price, according to C. D. Wood, Jr., sales promotion manager.



INSTEAD of the "Skin You Love To Touch" or Lucky Strike ads often seen in service station backgrounds today, the Marine Refining Co., Phoenix, Ariz., posts a large road map, much higher than its station building, in the background. It proves an attraction and convenience for motorists.

25 Foot Road Map Greets Tourists

PHOENIX, Ariz., June 9.

ALTHOUGH an aerial view of the Marine Refining Co.'s newly opened bulk plant here makes it appear as if the station had been dropped from the skies into the middle of a desert, a thriving business is conducted there. A well planned layout, coupled with modern efficiency and modern equipment, is helping to bring this about.

Every detail on the grounds has been planned with speed and safety as the objectives. Equipment has been so placed that driving in and out can be done quickly and easily. A loading platform, drum racks, garage, workshop, paint shop and office building comprise the main features of the layout.

It is planned that two additional exits will be cut through the brick wall which surrounds the station, to obviate backing and turning of cars in the yard and to give them "through service" from entrance to exit.

Along the west end of the station site runs a railroad spur, near which are located nine storage tanks with total capacity of 75,000 gallons. There are six 10,000-gallon and three 5000-gallon tanks.

In addition, four tanks are placed at the opposite side of the grounds, each of 40,000 gallons capacity, two for gasoline, and one each for kerosene and distillate. All tanks are painted white and water sealed on top, protected by ground wires and fed by gravity flow direct to the loading platform. The loading platform occupies the entire space between the lubricating oil tanks and the exit to the street.

The platform is divided into three parts. The end next to the street is occupied by the storage room for packaged goods which consist of three different grades of motor oil; Rainbow motor oil, which is sold as a Pennsylvania product; Marine-Eastern, a motor oil made from Mid-Continent crude; and Caline motor oil, made from western crude with a paraffin base.

The center division, 60 by 40 feet, comprises the working and loading platform. Drums of various sizes are stacked here for loading. At the extreme corner is a wash rack for cans.

Two drum racks are included in the layout, one at the end of the platform and the other at the extreme side of the yard.

THE garage consists of a workshop in charge of a trained mechanic who keeps the company's trucks in good condition. A paint shop takes up a room at one end of the building. Here are made all of the company's road signs and it also serves as headquarters for the paint crew which works outside.

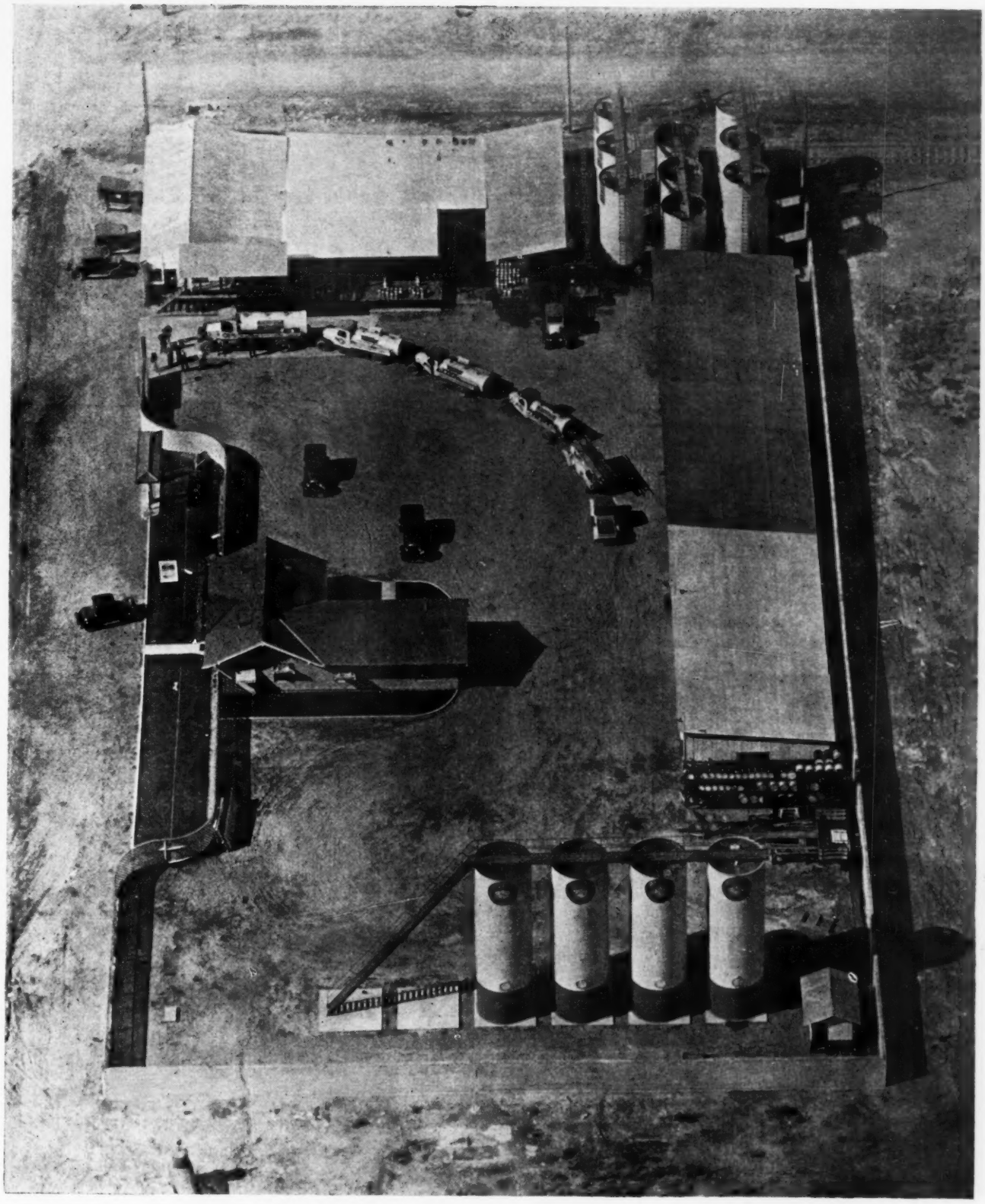
On the side next to the street, with a 20-foot grass plot before it, stands the office. It is a brick structure, built in the shape of a "T" and contains a general office and four private offices.

This bulk station is the tenth the Marine company has erected during the past year in northern and central Arizona. More stations will be built as business warrants, according to Jennings Johnson, manager at Phoenix. Mr. Johnson was formerly in charge at the Mesa, Ariz., plant when that station was being erected.

THE company also operates service stations at strategic points along main highways and has as an advertising feature a large road map, about twice the height of the station, as a background for each one of these service stations. This road map gives distances in each direction from whatever town the station is in. A station within striking distance of every motorist who has a gallon of gasoline left in his tank, as long as he remains within the bounds of the map, is the aim of the company.

"Marine Model" service stations, as the company calls them, are of structural iron with interchangeable parts. Any unit may be taken up from its base and shipped from place to place on flat cars without dismantling the entire structure.

A unique feature of the Phoenix bulk station is the high brick wall surrounding the station site, which is 300 by 240 feet. Stations and all equipment are painted in the company color scheme of fawn grey and green.



Airplane Fails to find an Unkept Corner

AERIAL view of a recently completed bulk station and office quarters of the Marine Refining Co., Phoenix, Ariz. It includes garage, work shop and paint shop. Storage capacity is 235,000 gallons. Site is 300 by 240 feet, surrounded by a high brick wall.

Grease Gun Specifications Drafted; Oil Bottle Rules Adopted

Staff Special

WASHINGTON, June 11

CHANGES and proposed changes in the recommended specifications of utensils used by oil dealers in measuring oil and grease for sale, were considered by dealers and experts on weights and measures at their annual conference in Washington. In a few days the office of the Bureau of Standards will give general circulation to the detailed report of their deliberations.

This was the twenty-first National Conference on Weights and Measures and the gathering was well attended.

Among the conferees were 15 representatives of manufacturers of oil and grease measuring equipment.

The conference agreed tentatively on specifications for mechanically operated grease measuring and dispensing devices which, if adopted, would make it unlawful to sell grease by the pound through any dispensing device. The specifications would provide only for devices which deliver pints and sub-multiples thereof. The scale may be according to the metric system but the foundation, whether stated in the English or the metric system, would be volume and not weight.

The conference has no regulatory authority. Its promulgations are not momentarily effective when adopted. Tentative specifications, such as those affecting grease guns, lie open for a year after they are agreed upon. They are given publicity and interested persons have a right to oppose their final adoption or propose their revision in whole or in part. But when adopted they are models for incorporation in state and city regulations. So all grease guns in use now will be all right to use for a year and maybe several years.

During the recent conference, specifications and tolerances for lubricating oil bottles, drafted in 1927, were adopted. Moreover they are recommended by the United States Bureau of Standards for adoption by states. They will be put into force Jan. 1, 1929, but will not immediately be retroactive. However, after July 1, 1930, all bottle and fruit jars in use at gasoline filling stations as oil measures and containers may be required to comply with the specifications and tolerances.

The rules governing oil bottles which will be effective in 1929 are as follows:

1. Bottles used for the sale of lubricating oil shall be made of clear, uncolored glass and only in sizes heretofore specified under the heading "Liquid Capacity Measures." They shall be made to contain their indicated capacities at a temperature of 20° C. (68° F), and they shall not be subdivided.

2. The overall heights of bottles of the various capacities shall not be greater than the values shown in the following table:

Capacity of bottle	Maximum height
2 quarts	12¾ inches
1 quart	10½ inches
1 pint	8¼ inches

3. Each bottle shall have its capacity clearly blown or otherwise clearly and permanently marked in or on the side of the bottle, and in or on the side or bottom the name, initials, or trade-mark of the manufacturer thereof.

4. Bottles shall be provided with a clearly defined graduation line blown or otherwise clearly and permanently marked in or on the bottle, and extending at least halfway around it which indicates the correct capacity, and with the words "Fill to line" or a similar or suitable inscription clearly and permanently marked in or on the bottle and clearly referable to this graduation line. This line shall in no case be more than 0.10 inch in width and the bottom edge of the line shall define the top of the meniscus of the water which is used in the test of the bottle. This graduation line shall be placed so that it is at least ¼ inch below the bottom of any metal top when this is screwed firmly into place. The capacity of that portion of the bottle above the bottom of the graduation line shall be at least 3 cubic inches.

5. When a bottle is equipped with a spout, this shall be so constructed that free and unobstructed drainage is provided. This specification shall be construed to require that there be an effective air vent in the spout and no shoulder or other obstruction tending to result in a trapping of the liquid being delivered. The spout shall not be over 6 inches in length measured from the point of contact with the top of the bottle to the tip of the spout.

TOLERANCES.—The tolerances to be allowed on all bottles used for the sale of lubricating oils shall be in excess only and shall be the values shown in the following table: There shall be no tolerance allowed in deficiency.

Capacity of bottle	Tolerance	
	Drams	Cubic Inches
2 quarts	12	2.7
1 quart	8	1.8
1 pint	6	1.4

Amendments to the code of specifications and tolerances for liquid measuring devices, including gasoline pumps, were adopted for clarification chiefly. The code was also rearranged as a matter of convenience in numbering. As revised, the specifications are recommended for adoption by state authorities not before July 1, 1929.

The program of the meeting was generally given over to matters affecting the oil business. The eight addresses by government officials were:

"Flash and Fire Points of Lubricating Oils," by G. H. Came.

"Pour Point and Color," by R. D. Best.

"Viscosity and Demulsibility," by P. A. Draper.

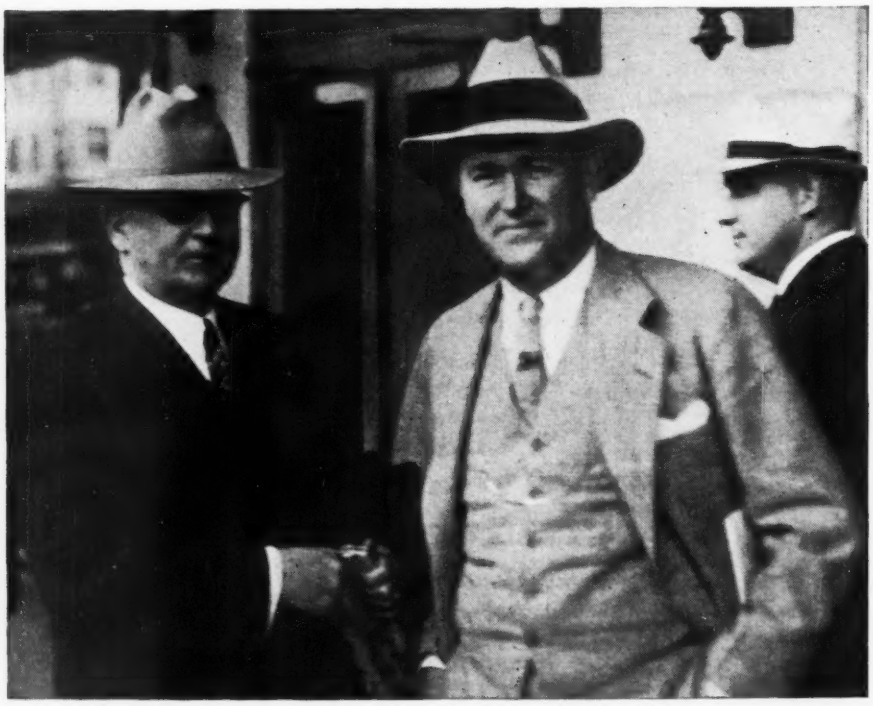
"Conradson Carbon Residue," by J. F. Swindells.

"Gasoline and Kerosene Distillation and Sulfur," by H. T. Kenney.

"Melting Point of Paraffin Wax," by R. C. Hardy.

"Thermometer Standardization," by Miss J. Busse.

"Hydrometer Standardization," by E. L. Peffer.



Earl Oliver left heads the Ponca City engineering firm that bears his name. Ed. A. Landreth, center, makes headquarters of the Landreth Production Co., of which he is president, at Fort Worth. At the right, in the background, is Ralph H. Cummins of the Marland Employees Royalty Co., Fort Worth

California Conservation Work Reorganized

LOS ANGELES, June 11.—The work of conserving gas and reducing the output of both oil and gas in California was recently reorganized through a new sub-committee which is to make an intensive study of gas storage in the formation and repressuring problems. Until recently subcommittees were undertaking to make a general study of all problems, including shut-in movement at Ventura Avenue and elsewhere. The old subcommittee will continue to function, but leave storage and repressuring problems to the new committee composed of engineers.

The new committee is headed by A. C. Rubel of the Union Oil Co. as chairman. H. P. George is vice chairman with the following composing the committee: Joseph Jensen, J. E. Hare, A. H. Bell, T. E. Swigart, A. F. Bridge, J. F. Dodge, C. W. Brown, H. J. Steiny and E. W. Masters. A meeting of this sub-committee was held in Los Angeles June 7 and another meeting well be held next week to formulate its findings and prepare a complete report to be made to the general oil conservation committee of which M. E. Lombardi of the Standard of California is chairman.

It is expected that a meeting of the general committee will be held in about two weeks, and following this meeting the report probably will be made public. It has been the general policy of those in control of the whole conservation movement in California to discourage the publication of details of the movement, except through official statements handed out rather infrequently by the general committee.

It is generally known that honest efforts to conserve are being made for concerted action of all of the companies operating in fields where there is any overproduction of either oil or gas.

Atlantic-Franklin Crude Rate is 35 Cents

OIL CITY, Pa., June 11.—The National Transit Co. has announced a tariff of 35 cents a barrel on crude oil shipped from Point Breeze, near Philadelphia, to western refining points. The tariff will be effective June 12. Only tenders of 50,000 barrels or more directed to one consignee will be accepted.

At present only the Atlantic Refining Co.'s refinery at Franklin will receive the oil shipped from the Atlantic coast. The Atlantic will tender its own production from Texas field.

This is the first time crude has ever been shipped by line from the east coast inland. The tariff is slightly more than one-half the pipe line rate from the Mid-Continent to Franklin.

Marland Makes Three Changes

C. W. ANDERSON

F. E. MILLER

Three changes in the wholesale department of the Marland Refining Co. became effective June 1, with the establishment of a new wholesale office at Tulsa. C. W. Anderson, who has been assistant to Wesley I. Nunn, manager of the wholesale department at Ponca City, is manager of the new Tulsa office. L. E. Thomason, who has been manager of the Kansas City office for eight years, succeeds Anderson as assistant wholesale manager. F. E. Miller, formerly in the New York and Texas City wholesale offices, succeeds Thomason as manager of the Kansas City office.

N. P. A. Chemists Visit Bureau of Standards

WASHINGTON, June 11.—Chemists of 36 member companies of the National Petroleum Association made their annual pilgrimage to the Bureau of Standards June 8 and 9 under escort of Fayette B. Dow and H. L. Lohnes of the Washington office of the association. Those attending were:

R. B. Allmendinger, Superior Oil Works; D. E. Bechtol, Emlenton Refining Co.; Earl Bown, Emery Manufacturing Co.; R. R. Buckham, Independent Refining Co.; R. H. Cool, Crew Levick Company; Ronald Dawson, Conewango Refining Co.; L. C. Derbyshire, Sinclair Refining Co.; John Donnelly, James B. Berry Sons Co.; G. R. Dye, Ohio Valley Refining Co.; Mr. Fisher, Valvoline Oil Works; W. E. Forney, Crew Levick Co.; Arthur Hagen, Valvoline Oil Works; Mr. Hanna, Continental Refining Co.; C. J. Hesch, Elk Refining Co.; Louis Hodous, Canfield Oil Co.; Cedric Hulme, Kendall Refining Co.; E. M. Hyatt, V. Herbert, Sinclair Refining Co.; Clarence R. Johnson, Tiona Refining Co.; Willis A. Johnson, Pennzoil Co.; M. E. Kofford, Pennsylvania Refining Co.; R. C. Kirwin, Freedom Oil Works Co.; F. R. Lang, Roxana Petroleum Corp.; Grant M. Lyons, Viking Oil Corp.; H. N. Lyons, Henry L. Doherty Co.; E. A. McCadden, Pure Oil Co.; G. J. Murphy, Tiona Petroleum Co.; Emery Nelson, Levi Smith Rfg. Co.; R. F. Patterson, Freedom Oil Works Co.; E. D. Peterson, Tiona Refining Co.; F. W. Richardson, Seneca Oil Works; H. C. Salsbury, Bradford Oil Rfg. Co.; W. G. Sieber, Waverly Oil Works Co.; W. B. Smith, Empire Oil Works Co.; Herbert W. Wagner, United Refining Co., and W. N. Westcott, Crew Levick Co.

Attends Kiwanis Convention

OIL CITY, Pa., June 11.—A. W. Scott, secretary-treasurer of the Empire Oil Works, is leaving June 13 for a three weeks' trip to the Pacific coast. Mr. Scott is a delegate to the convention of Kiwanis International at Seattle, Wash. He is president of the Oil City Kiwanis. Mr. Scott will spend some time in Washington and in Colorado.

CHICAGO, June 9.—John L. Gray, vice president and general manager of the Shaffer Oil & Refining Co., Tulsa, has been elected a director of the Standard Gas & Electric Co., which like Shaffer is a Byllesley.

Frank E. Wellman, superintendent of the Manhattan Oil Co. plant at Kansas City, snapped while inspecting a refinery at Shreveport

Buys Marketing Properties Of Mississippi Jobber

NATCHEZ, Miss., June 11.—Joseph Zuccaro, who has operated the Independent Oil Co. of Jackson, Miss. for five years, and Mrs. Marie K. Zuccaro May 19 purchased the Winston Petroleum Products Co. of Natchez.

Mr. and Mrs. Zuccarro are operating the Winston oil marketing properties under the name of the Natchez Petroleum Co. Sinclair products are handled and business is conducted in Adams, Franklin, Wilkinson and Jefferson counties.

Three additional service stations will be erected, according to Mr. Zuccaro. At present the company is supplying oil to the 407 Tire & Service Co. here, which is operated by B. F. Snead. Mr. Snead was formerly in charge of this station for the Winston company.

Properties of the Independent Oil Co. were leased to the Panhandle Oil Co. of this city upon Mr. Zuccaro's purchase of the Winston company.

Graver Closes Tulsa Office

EAST CHICAGO, Ind.—June 15 the Graver Corp. will discontinue its Tulsa office and move it to Fort Worth, Tex., where it has a branch in the Petroleum building. Joseph C. Winslow, manager of sales promotion at East Chicago, has announced.

BRADFORD, June 11.—Pleurisy and heart disease caused the death June 5 of Ernest L. Korner, producer in the Bradford field. Mr. Korner was 50 years old. He was born at Reno, Pa., and early in life lived at Dallas, Tex. He moved about 10 years ago to Bradford.

A.P.I. Body Endorses Tulsa Exposition

(By Telegraph)

COLORADO SPRINGS, Colo., June 12.—Endorsement of the coming petroleum exposition in Tulsa was the first business transacted at the mid-year meeting of the American Petroleum Institute commencing here today. The resolution read:

"Recognizing the great value of the International Petroleum Exposition as a clearing house of ideas and a great meeting place for oil men and appreciating its great importance to the advancement of the work of the standardization division of the American Petroleum Institute as a display room workshop and laboratory for scientific technical and educational advancement and development, we, the members of the standardization division in regular meeting assembled, do hereby heartily endorse the International Petroleum Exposition as a permanently established institution of world wide influence and pledge our moral support to its further advancement."

Gypsy's No. 1 Mission Makes 2700 Bbls.

(By Telegraph)

TULSA, June 12.—Further confirmation that there is another pool of importance in the Seminole group northwest of Bowlegs, was given yesterday when Gypsy Oil & Gas Co. topped the Wilcox sand at 4327 feet in its No. 1 Mission in the SW corner of Sec. 5-8-6. The well started off at about 60 barrels per hour and in the first 24 hours made 2702 barrels. It is now 13 feet in the sand at a total depth of 2740 feet and is producing 153 barrels per hour. The well is to be deepened two more feet and produced for one day at that depth before being shut down to 100 barrels per day. The well is a half mile north of Gypsy's Dosar well which has been pinched in to 100 barrels per day for several months.

Geologists To Meet at Fort Worth

TULSA, June 12.—The fourteenth annual meeting of the American Association of Petroleum Geologists will be held at Fort Worth, Tex. on March 21, 22 and 23, 1929, at the invitation of Fort Worth geologists, according to J. P. D. Hull, business manager. Plans will be announced later.

NEW YORK, June 12.—On June 12 Standard Oil Co. of New Jersey advanced prices of gasoline for export in cases ½ cent per gallon, making new price 25.90 cents per gallon at New York. Last previous change was ¼ cent advance on April 20.

F. W. Burford, vice president and general manager of the Crystal Oil & Refining Corp., acted as one of the hosts to refinery technologists visiting Shreveport

Empire Oil Works Buys Tidioute Refining

OIL CITY, Pa., June 12.—Individual interests that control the Empire Oil Works, Inc., Oil City, Pa., have bought controlling stock in the Tidioute Refining Co., Tidioute, Pa. Officers elected after the acquisition are: A. L. Confer, president; E. W. Chase, vice-president; and H. R. Hawkey, secretary and treasurer. These men and A. W. Scott form the board of directors. Other directors may be elected later.

Mr. Hawkey formerly was with the Tidioute. The other men have been associated with the Empire.

The Tidioute company was organized and the refinery at Tidioute built in 1915 by a group of producers from the Tidioute and Warren districts. The plant has a capacity of about 25,000 barrels of crude oil a month. The company has 40 tank cars and bulk and service stations in Ohio and Pennsylvania. It has run only Pennsylvania grade crude oil.

The Empire Oil Works was organized in 1879 by Mr. Confer and was operated by him continuously as an individual until December, 1925. The enterprise was then consolidated with the Empire Oil & Grease Co. and incorporated as the Empire Oil Works, Inc.

Its directors are: Mr. Confer, Mr. Chase, Frederick Fair, J. J. Rhoades, E. R. Cnade, L. D. Pierce, A. R. St. Clair, H. F. Krathge, and Mr. Scott. A. W. Cole is superintendent.

This company has a refinery at Reno, near Oil City where it manufactures Penn-Empire lubricating oils and other products. Output of these oils was increased 150 per cent last year, Mr. Scott said, and production so far this year has been 20 per cent more than last year's output.

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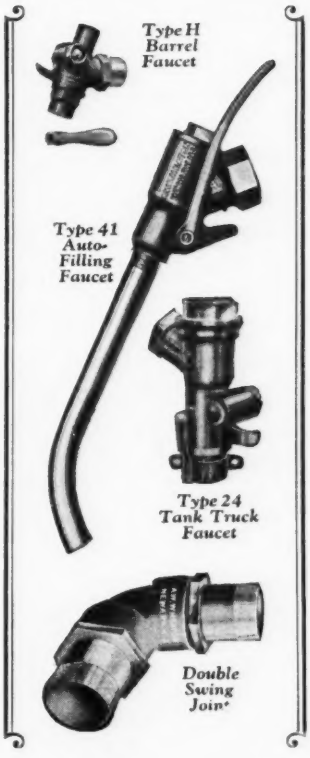
Wheaton Faucets, Valves, Swing Joints, Couplings, Fillers, Nozzles, etc., have long been recognized throughout the oil industry as the foremost products of their kind. Their reputation for *quality* extends back to the days when the oil business was known as a $750,000,000-industry, as contrasted to the $11,000,000,000-industry of today.

Wheaton *quality* is predicated on three essential factors: superior design, better material, finer workmanship. And it is most apparent in the fine fit and finish for which Wheaton Products are noted. Send for illustrated catalog – no obligation.



Above: Gulf Refining Company Tank Truck, equipped with Wheaton Type A Faucets. At right: A clearer view of this faucet.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd., London, Ontario—Canadian Manufacturers & Distributors

Wheaton

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Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended June 8 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended June 8	Total Week Ended May 11
Plants Reporting	12	28	28	12	80	80
Crude Capacity (bbls.)	92,000	157,200	127,600	54,900	431,700	416,600
Cracking Capacity	30,700	52,600	17,200	22,700	123,200	122,200
Da. Av. Crude Runs	68,727 + 4.7	118,540 + 3.5	82,469 — 3.0	57,175 — 6.8	326,911 + 0.1	309,494
Da. Av. Other Oils	6,329 — 18.1	7,114 + 17.9	8,575 + 13.4	309 — 75.2	22,327 — 1.1	15,526
GASOLINE—Gallons						
Stocks, June 1	14,187,000	44,564,000	15,729,000	4,185,000	78,665,000	96,707,000
Prod. 6-1 to 6-8	9,922,000 + 5.1	18,561,000 — 0.6	9,654,000 + 1.8	5,324,000 — 3.6	43,461,000 + 0.8	41,154,000
Ship. 6-1 to 6-8	9,267,000 — 2.8	19,739,000 — 8.1	9,676,000 + 2.4	5,387,000 — 5.4	44,059,000 — 4.5	45,270,000
Stocks, June 8	14,842,000 + 4.6	43,386,000 — 2.6	15,707,000 — 0.1	4,122,000 — 1.5	78,057,000 — 0.8	92,591,000
Ratio Sales to Prod.	93.4%	106.3%	100.2%	101.2%	101.4%	110.0%
KEROSENE—Gallons						
Stocks, June 1	4,840,000	4,756,000	1,444,000	852,000	11,892,000	9,597,000
Prod. 6-1 to 6-8	2,035,000 + 4.1	2,385,000 — 9.3	1,270,000 — 14.2	375,000 + 20.6	6,065,000 — 4.9	6,277,000
Ship. 6-1 to 6-8	1,516,000 — 13.3	2,466,000 + 25.0	1,342,000 — 13.3	296,000 +305.5	5,620,000 + 6.0	6,102,000
Stocks, June 8	5,359,000 + 10.7	4,675,000 — 1.7	1,372,000 — 5.0	931,000 + 9.3	12,337,000 + 3.7	9,772,000
Ratio Sales to Prod.	74.5%	103.4%	105.7%	78.9%	92.7%	97.2%
STOVE DISTILLATE—Gallons						
Stocks, June 1	1,874,000	2,164,000	329,000	69,000	4,436,000	3,531,000
Prod. 6-1 to 6-8	467,000 + 26.2	237,000 + 16.7	235,000 + 19.3	69,000 — 22.5	1,008,000 + 17.3	902,000
Ship. 6-1 to 6-8	619,000 +259.9	185,000 + 86.9	87,000 — 47.9	80,000 + 8.1	971,000 + 89.6	476,000
Stocks, June 8	1,722,000 — 8.1	2,216,000 + 2.4	477,000 + 45.0	58,000 — 15.9	4,473,000 + 0.8	3,957,000
Ratio Sales to Prod.	132.5%	78.1%	37.0%	115.9%	96.3%	52.8%
GAS OIL—Gallons						
Stocks, June 1	7,963,000	33,052,000	2,048,000	5,720,000	48,783,000	45,224,000
Prod. 6-1 to 6-8	2,333,000 + 8.9	4,232,000 + 59.4	904,000 — 37.1	1,877,000 — 19.6	9,346,000 + 9.1	6,288,000
Ship. 6-1 to 6-8	1,731,000 — 8.2	2,912,000 + 81.0	993,000 — 39.9	1,930,000 + 4.0	7,566,000 + 8.1	5,715,000
Stocks, June 8	8,565,000 + 7.6	34,372,000 + 4.0	1,959,000 — 4.3	5,667,000 — 0.9	50,563,000 + 3.6	45,797,000
Ratio Sales to Prod.	74.2%	68.8%	109.8%	102.8%	81.0%	90.9%
FUEL OIL—Gallons						
Stocks, June 1	17,281,000	41,097,000	40,858,000	21,475,000	120,711,000	103,604,000
Prod. 6-1 to 6-8	7,578,000 + 5.5	8,612,000 + 11.1	12,564,000 + 1.6	8,452,000 — 7.7	37,206,000 + 2.0	34,369,000
Ship. 6-1 to 6-8	6,051,000 — 0.3	7,286,000 + 4.1	9,869,000 + 2.7	9,567,000 + 11.1	32,773,000 + 4.7	31,870,000
Stocks, June 8	18,808,000 + 8.8	42,423,000 + 3.2	43,553,000 + 6.6	20,360,000 — 5.2	125,144,000 + 3.7	106,103,000
Ratio Sales to Prod.	79.8%	84.6%	78.5%	113.2%	88.1%	92.7%

Gasoline Produced by Various Methods, Week Ended June 8

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,617,000	66.7	14,070,000	75.8	7,311,000	75.7	2,323,000	43.6	30,321,000	69.8
Cracked	2,590,000	26.1	3,479,000	18.7	1,787,000	18.5	2,492,000	46.8	10,348,000	23.8
Natural	715,000	7.2	1,012,000	5.5	556,000	5.8	509,000	9.6	2,792,000	6.4
Total	9,922,000		18,561,000		9,654,000		5,324,000		43,461,000	

+ or — columns are % change from previous week.

Gasoline Stocks Lowered Although Demand Falls

Staff Special—By Telegraph
TULSA, June 12

UNFAVORABLE weather in the marketing territory of Mid-Continent refiners reduced domestic business in the week ended June 8 with the result that shipments of gasoline from 80 refineries fell 2,000,000 gallons as compared with shipments in the week ended June 1. Shipments from the 80 plants totaled 44,069,000, compared with 46,150,000 gallons the previous week and 48,584,000 gallons in the week ended May 25.

The fall in gasoline shipments was felt most keenly in Oklahoma where reporting plants showed gasoline shipments of 19,739,000 gallons, compared with 21,482,000 gallons the previous week. Texas refiners increased shipments 230,000 gallons. North Louisiana and Arkansas refiners reported a loss in shipments of 300,000

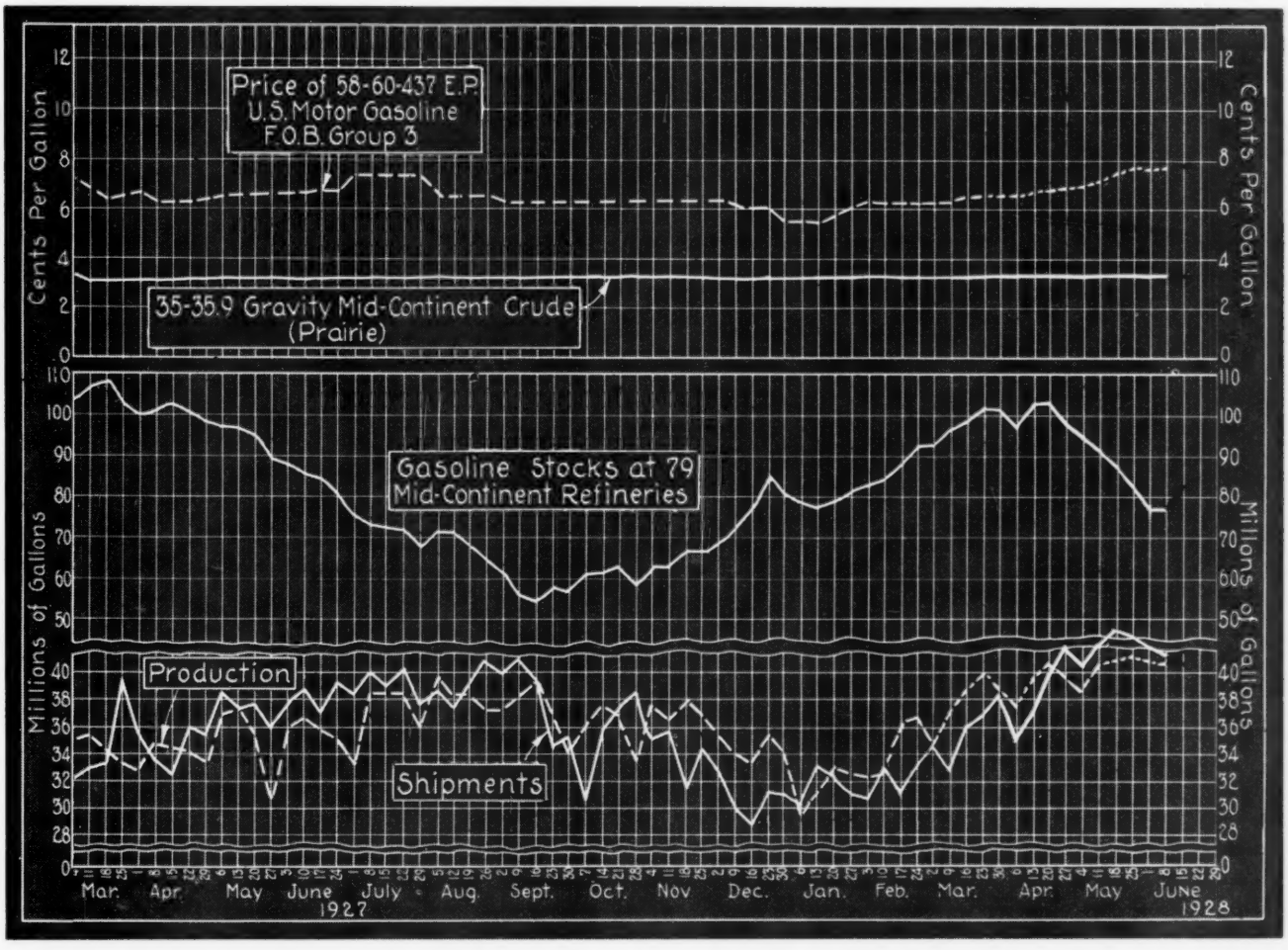
Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended June 8. Change in stocks figured from May 11.

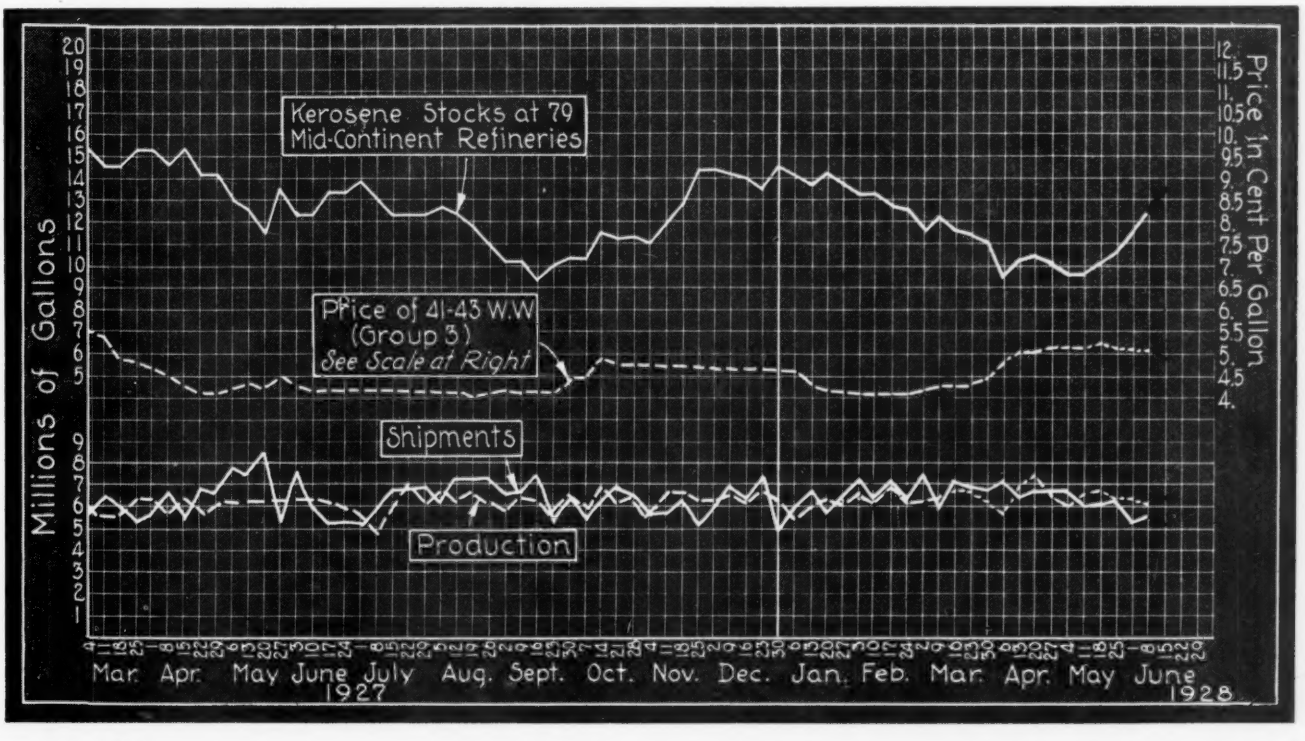
	Gallons
GASOLINE	
Production	172,943,000
Shipments	187,477,000
Net change in stocks	—14,534,000
Ratio sales to production	108.4%
KEROSENE	
Production	25,782,000
Shipments	23,217,000
Net change in stocks	+2,565,000
Ratio sales to production	90.1%
STOVE DISTILLATE	
Production	3,384,000
Shipments	2,868,000
Net change in stocks	+516,000
Ratio sales to production	84.8%
GAS OIL	
Production	31,262,000
Shipments	26,496,000
Net change in stocks	+4,766,000
Ratio sales to production	84.8%
FUEL OIL	
Production	146,909,000
Shipments	127,868,000
Net change in stocks	+19,041,000
Ratio sales to production	87.0%

Barometer of Mid-Continent Refinery Market—Week Ending June 8

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News

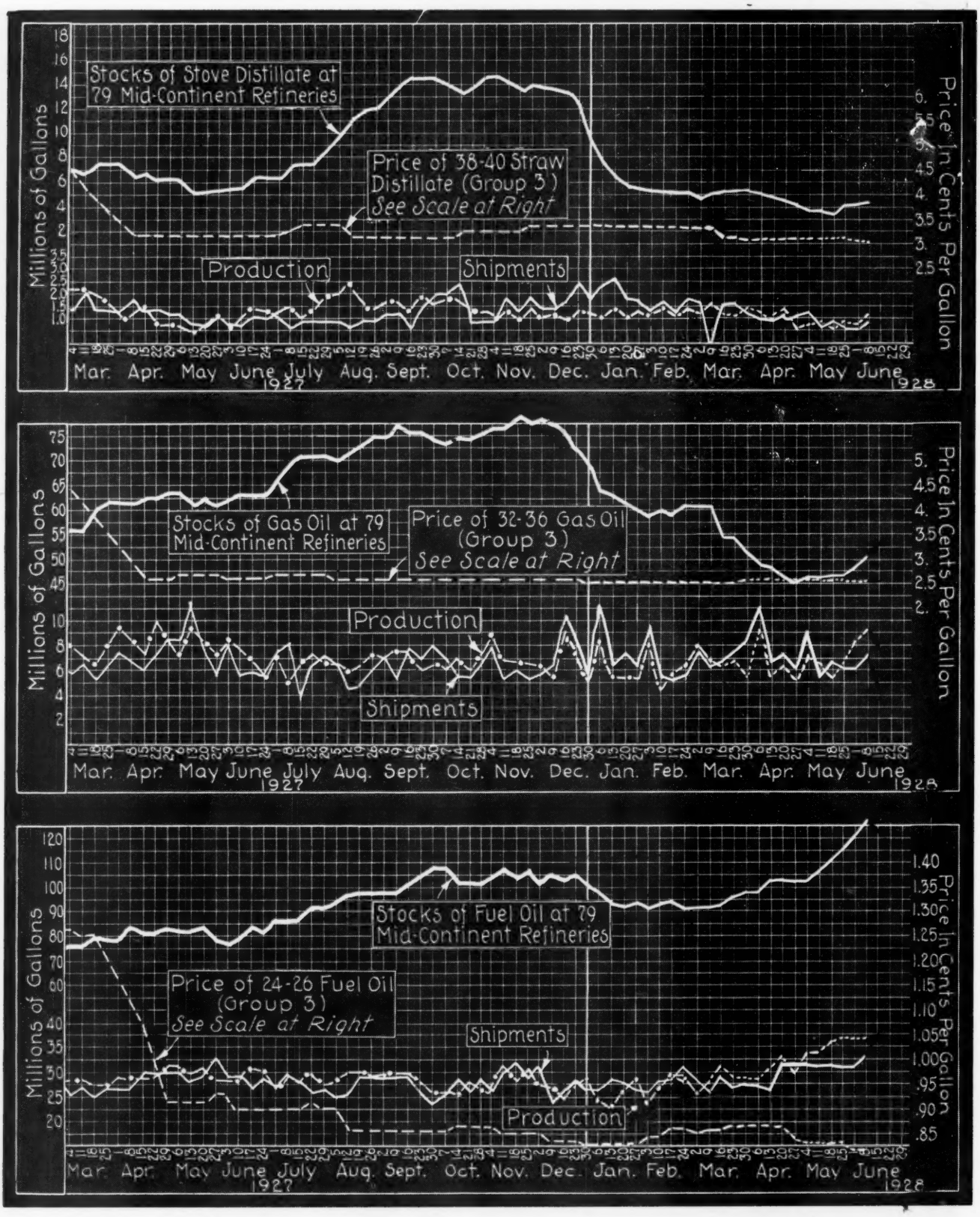

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Mar. Apr. May June July Aug. Sept. Oct. Nov Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

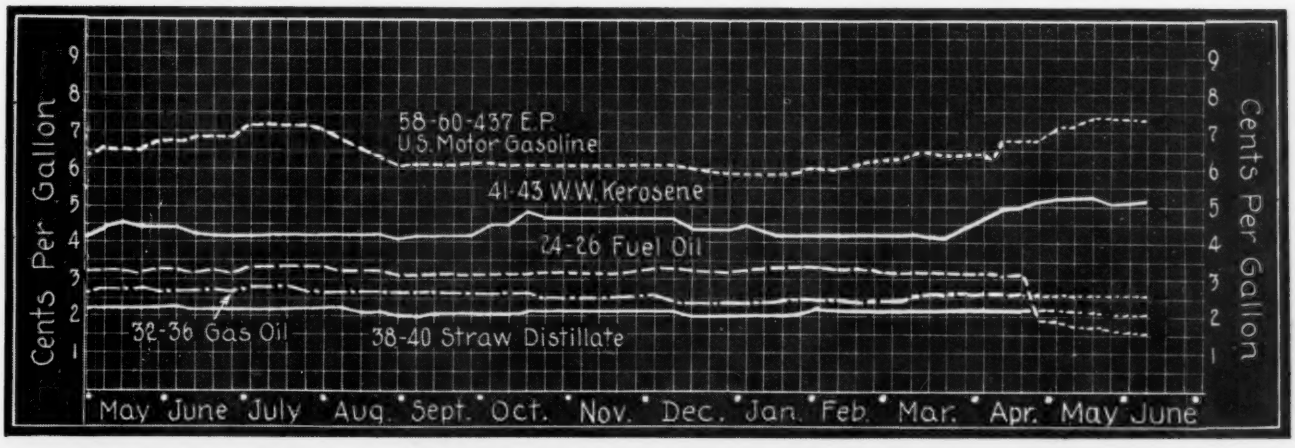

Kerosene Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Price of 41-43 W.W (Group 3) See Scale at Right
Price in Cent Per Gallon
Shipments
Production
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending June 8

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
24-26 Fuel Oil
32-36 Gas Oil
38-40 Straw Distillate
May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

gallons. The Kansas group reported a fall in shipments of 263,000 gallons.

In spite of the lower movement of gasoline there was a small reduction in gasoline stocks. Total reserves June 8 were 78,057,000 gallons, on 12.3 days' supply, compared with 78,665,000 gallons June 1, a reduction of 608,000 gallons.

Kansas refiners increased gasoline stocks 655,000 gallons to 14,842,000 gallons, in Oklahoma the stock reduction totaled 1,187,000 gallons, bringing inventories down to 43,386,000 gallons. Slight reductions were made in stocks in Texas and Louisiana and Arkansas.

Gasoline production increased 333,000 gallons or 0.8 per cent to 43,461,000 gallons as a result of an increase in crude runs.

Crude runs averaged 326,911 barrels a day, compared with 326,499 barrels a day the previous week. Still charges of partly refined oils averaged 22,327 barrels a day compared with 22,569, barrels the week before.

Oklahoma and Kansas refiners reported increases in crude runs, Texas, and Louisiana and Arkansas plants reduced runs. Kerosene shipments increased 300,000 gallons to 5,620,000 gallons but with production totaling 6,065,000 gallons, stocks were increased 445,000 gallons to 12,337,000 gallons. June 10, 1927, kerosene stocks were 12,488,000 gallons.

Production of stove distillate almost balanced shipments. Stocks increased only 37,000 gallons to 4,473,000 gallons, compared with 5,990,000 gallons a year ago.

Stocks of gas oil were increased nearly 2,000,000 gallons to 50,563,000 gallons. Shipments were up 500,000 gallons but production was increased nearly 1,000,000 gallons.

After a long period of stock reductions gas oil stocks in the last four weeks have risen 4,766,000 gallons. The present total of 50,563,000 gallons is still 18,000,000 gallons below the level of last year's stocks which totaled 68,595,000 gallons June 10.

Fuel oil stocks also continued to increase in the first week of June, rising 4,443,000 gallons to 125,144,000 gallons. Shipments for the week totaled 32,773,000 gallons and production 37,206,000 gallons. A year ago fuel oil stocks totaled 79,509,000 gallons.

Torpedo Companies Are Merged

TULSA, June 9.—A merger of the Independent Torpedo Co. and the Eastern Torpedo Co. has been announced. The company thus formed, to be known as the Independent-Eastern Torpedo Co., is the largest "shooting" company in the world, being capitalized at $1,000,000.

Main offices of the new company will be in Findlay, Ohio. By means of the merger it will be able to shoot wells in any field in the United States. Officers include S. W. Mascho, president and treasurer, W. H. Jeffery and E. C. Edwards, vice-presidents, and R. W. Shoupe, secretary.

Western headquarters of the company will be at 619 E. Fourth street, Tulsa, Okla. C. K. Abbott, long western manager for the Independent, will continue to serve in that capacity for the new combine.

Weighted Average Prices Oklahoma Market

On Feb. 6, 1928, National Petroleum News adopted the policy of publishing weighted average prices on the four more important gasolines in Oklahoma, instead of a range in prices. These weighted averages together with the number of cars of each grade sold, as of Monday, June 11, are published below. The figures are not available for publication in the refinery market table on page 114 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	106	7.7926
60-62, 437 e. p.	8	7.8750
60-62 400 e. p.	9	8.0000
64-66, 375 e. p.	2	8.1875

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery in tank car lots.

Two New Gasoline Plants

SHREVEPORT, June 11.—The Magnolia Gas Co. recently completed two high pressure gasoline plants in this area. One is located at Sarepta, the other at Pine Island. Both are on feeder gas lines connecting with the main Latex gas lines to Beaumont and Dallas.

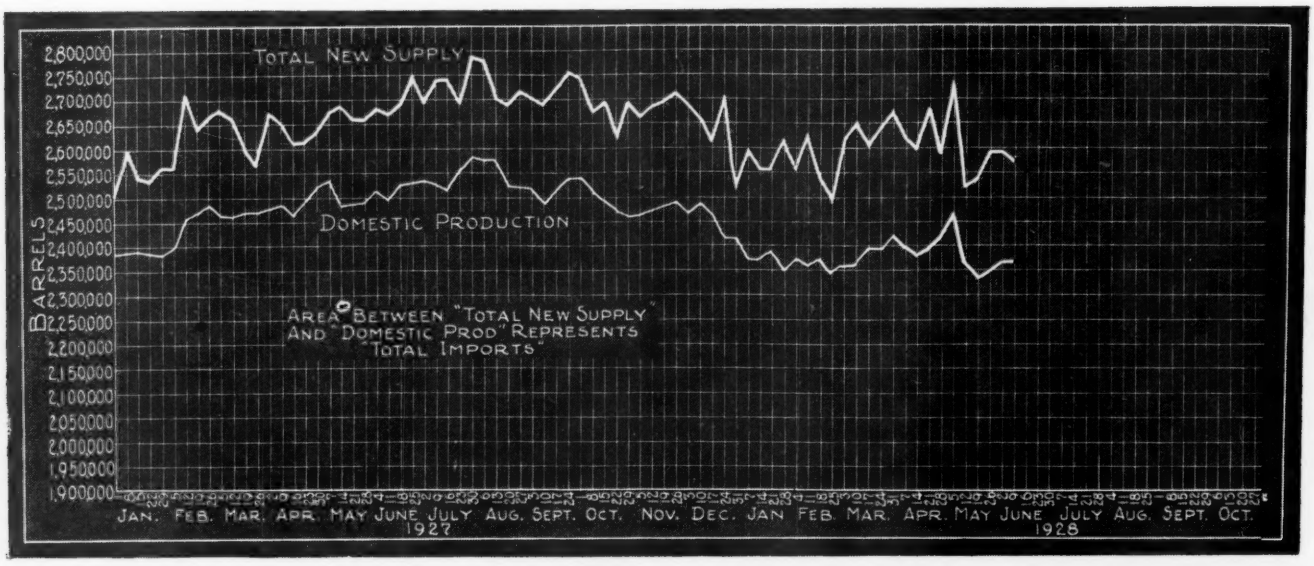
Two days before the Sarepta plant was completed the Ohio Oil Co. brought in its phenomenal fifty million foot gas well, which had a gasoline content of 1.5 gallons per thousand. This well is on the Latex lines. The 8000-gallon Sarepta plant started with a production of 30,000 gallons per day, almost four times its rated capacity.

The two plants were built by Magnolia crews on designs of the Jackson Engineering and Equipment Co.

Correction

Information received after the refinery market table was published on page 114 of this issue indicates that price of Pennsylvania 45 w.w. kerosene on June 11 should have been 6.50 to 7.25 cents, instead of 6.625 to 7.25 cents. Prices will be corrected in the June 20 issue in the June 11 column.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	June 9	June 2
Production east of Rockies	1,719,000	1,724,600
Decrease		5,600
Total production in U. S.	2,363,800	2,365,400
Decrease		1,600
Crude oil imports	206,428	*236,858
Decrease		30,430
Total crude supply	2,570,228	*2,602,258
Decrease		32,030

*Revised.

	June 9	June 2
OKLAHOMA		
North Braman	2,900	2,950
South Braman	1,550	1,600
Blackwell	3,400	3,450
Hubbard	2,850	2,900
Thomas	1,350	1,400
Tonkawa	14,350	13,550
Garber	8,700	8,600
Burbank	32,750	33,400
Osage, outside Burbank	28,500	28,550
Watchorn	700	750
Cushing	20,050	20,150
Yale Jennings	9,000	9,050
Davenport	2,000	2,000
Bristow-Slick	22,650	22,950
North Okmulgee	15,400	15,400
Lyons-Deaner	6,550	6,600
Stroud	1,050	1,050
Cromwell	9,750	9,600
Papoose	4,400	4,350
Wewoka	6,550	6,800
Seminole	52,250	52,000
Bowlegs	62,550	63,250
Searight	14,700	15,250
Little River	44,500	45,150
Earlsboro	90,000	91,750
Duncan district	6,950	6,750
Graham	5,700	5,750
Fox	1,700	1,700
Healdton	13,950	13,900
Hewitt	9,300	9,200
Scholem Alechem	15,000	14,200
Others	85,600	85,700
Total, Oklahoma	596,650	599,700
Decrease		3,050
KANSAS		
Greenwood County	29,200	29,300
Florence-Covert	1,400	1,400
Peabody-Elbing	3,600	3,600
Eldorado-Towanda	14,000	14,000
Augusta-Fox-Bush	4,050	4,050
Rainbow Bend	1,600	1,600
Russell	3,500	3,600
Churchill	12,050	12,250
Oxford	12,400	13,400
Others	24,750	24,750
Total, Kansas	106,550	107,950
Decrease		1,400
NORTH LOUISIANA		
Homer	4,400	4,400
Haynesville	6,300	6,250
Caddo, light	9,600	9,700
Caddo, heavy	3,300	3,500
De Soto, Red River	4,200	4,050
Elm Grove	550	550
Bellevue	900	1,050
Cotton Valley, light	1,550	1,700
Cotton Valley, heavy	4,150	4,300
Urania	7,700	6,600
Pleasant Hill	600	600
Total, North Louisiana	43,250	42,700
Increase		550
ARKANSAS		
El Dorado	5,350	5,350
Champagnolle	28,000	28,600
Smackover, light	7,850	7,800
Smackover, heavy	60,400	60,650
Stephens	1,050	1,050
Nevada	1,700	1,350
Lisbon	2,150	2,150
Others	100	100
Total, Arkansas	106,600	107,050
Decrease		450
TEXAS (Outside Gulf Coast)		
Panhandle District		
Hutchinson County	36,000	38,000
Carson County	7,000	7,100
Gray County	19,200	18,800
Wheeler County	1,100	1,200
Others	100	100
Total, Panhandle District	63,400	65,200
Decrease		1,800
North Texas		
Burkburnett	10,500	10,500
Electra	13,200	13,100
Iowa Park and K-M-A	3,850	3,900
Wilbarger	15,000	13,000
Archer County	21,500	21,800
Montague-Cooke	12,200	12,050
Others	600	650
Total, North Texas	76,850	75,000
Increase		1,850
West Central Texas		
Stephens County	7,850	7,950
Eastland-Desdemona	7,600	7,750
Brown County	13,050	12,900
Coleman County	1,900	1,850
Callahan County	3,800	3,700
Shackleford County	9,900	9,800
Young County	7,350	7,250
Throckmorton County	1,000	1,000
Palo Pinto County	350	400
Jack County	1,300	1,350
Others	650	600
Total, West Central Texas	54,750	54,550
Increase		200
West Texas		
Jones County	1,350	1,300
Mitchell and Scurry Counties	2,950	3,000
Howard County	4,500	4,450
Reagan County	17,500	17,700
Crane and Upton Counties	68,000	69,800
Crockett County	2,250	2,300
Pecos County	53,000	53,150
Winkler County	143,000	140,550
Others	1,850	1,700
Total, West Texas	294,400	293,950
Increase		450
East Central Texas		
Mexia	6,850	6,900
Currie	500	500
Richland	500	500
Wortham	1,850	1,900
Corsicana-Powell	11,100	11,150
Nigger Creek	1,250	1,250
Total, East Central Texas	22,050	22,200
Decrease		150
Southwest Texas		
Luling	13,050	13,000
Lytton Springs	1,300	1,400
Somerset	700	700
Laredo District	5,700	5,750
Piedras Pintas		
Dale	1,050	1,300
Others	400	400
Total, Southwest Texas	22,200	22,550
Decrease		350
Total, Texas (Outside Gulf Coast)	533,650	533,450
Increase		200
GULF COAST		
Coastal Texas		
West Columbia	7,950	7,600
Damon Mound	850	900
Big Creek	1,450	1,500
Boling	2,650	3,000
Blue Ridge	5,850	6,100
Pierce Junction	11,950	14,250
Humble	1,100	1,150
Goose Creek	7,200	7,000
South Liberty	4,350	3,950
Hull	12,050	12,650
Saratoga	1,100	1,100
Batson	1,400	1,300
Barber's Hill	700	700
Sour Lake	3,400	3,500
Spindletop	41,900	41,250
Orange County	4,400	4,300
Others	1,700	2,150
Total, Coastal Texas	110,000	112,400
Decrease		2,400
Coastal Louisiana		
Vinton	4,600	4,550
Lockport	4,050	4,000
Evangeline	900	950
East Hackberry	5,150	2,900
Edgerly	950	1,200
Others	13,400	5,850
Total, Coastal Louisiana	29,050	19,450
Total Gulf Coast	139,050	131,850
Increase		7,200
ROCKY MOUNTAIN		
Wyoming		
Salt Creek	43,250	49,700
Grass Creek	2,500	2,500
Elk Basin	1,150	1,050
Big Muddy	2,600	2,600
Lost Soldier	4,300	4,350
Rock Creek	2,650	2,600
Lance Creek	650	700
Teapot Dome		
Others	6,300	6,550
Total, Wyoming	63,400	70,050
Decrease		6,600
Montana		
Cat Creek	1,750	1,750
Sunburst	8,800	8,800
Others	150	150
Total, Montana	10,700	10,700
Colorado		
Moffat (Craig)	1,000	1,250
Fort Collins	2,700	2,550
Florence	1,200	1,550
Others	2,100	1,700
Total, Colorado	7,000	7,050
Decrease		50
New Mexico		
Table Mesa		350
Hogback	200	200
Artesia	1,250	1,250
Rattlesnake		100
Others	200	200
Total New Mexico	1,650	2,100
Decrease		450
Total, Rocky Mountain	82,750	89,900
Decrease		7,150
California		
Santa Fe Springs	36,000	36,000
Long Beach	198,500	195,500
Huntington Beach	55,000	56,000
Torrance	18,000	18,000
Dominguez	12,000	12,000
Rosecrans	6,000	6,000
Inglewood	29,000	29,000
Midway-Sunset	73,500	73,500
Ventura Avenue	47,500	45,500
Seal Beach	37,500	37,500
Others	131,800	131,800
Total California	644,800	640,800
Increase		4,000
Eastern		
(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	110,500	112,000
Decrease		1,500

T. B. Slick Finds Big Pay in Offset To Small Well in Wilcox Sand

By John Power
N. P. N. STAFF WRITER

TULSA, June 11

AFTER a dull week the Mid-Continent came to life with a start. T. B. Slick furnished the fireworks for Oklahoma with his No. 1 Harper, a 5000-barrel producer in the NE NW SE of 19-7N-5E Pottawatomie county.

The well, which offsets to the east the Wilcox sand discovery well of the Magnolia Petroleum Co., came as a surprise to operators, as the first five feet of Wilcox sand did not increase the 210 barrels which was coming from the Simpson lime. However, after being deepened to 4122 feet, the well started off at 152 barrels an hour under 60 pounds back pressure.

The flow increased to a point where it seemed safe to estimate the well as good for 5,000 barrels daily.

The Magnolia discovery well never approached such proportions; its present production is about 500 barrels a day on air coming from the Wilcox found at 4094-4101. Initial production of the Magnolia well was 660 barrels on the swab.

A failure in the same township was recorded this week. The Wolfe Oil Co. No. 1 Gwinn, in the SW NW of 16-7-5, found a hole full of water in the Wilcox from 4378-4417. This duster is too far away from the Slick well to have any great bearing on the potentialities of the area surrounding the producer. This township is the one next west of 7-6 which contains most of the Little River pool.

Not to be outdone in efforts to allay any fears of an oil shortage in the near future, the field a few miles east of the old El Dorado field in Arkansas, added a healthy producer to the list. The Rovenger No. 1 Gregory, in the SE NE NW of 10-17S-14W, Union county, Ark., came in for about 280 barrels an hour from the deep sand at 3246 feet. The well extends production ½ mile west and ¼ mile north.

The Texas Panhandle entry finished third in the race. The Lefors Petroleum Co. No. 2 Shaw (No. 1 being a gas well), topped the granite wash pay at 2675 feet. The well, in the NW corner of the Travis Leach survey, 4½ miles southeast of the Bowers pool in Gray county, made 200 barrels in one hour for its maximum production. For the first few hours the yield amounted to about 100 barrels an hour, after which paraffin troubles reduced the flow to about 40 barrels hourly. Close to 10 million cubic feet of gas was being produced with the oil, making it impossible to run the tools and clean out.

Restriction Sought

Staff Special—By Telegraph

TULSA, June 11

PLANS covering the restriction of development in the area opened up in 19-7-5, Pottawatomie county, Okla., by the new Wilcox producer of T. B. Slick, will be discussed June 12 by leaseholders in the neighborhood of the well. It is hoped to limit production of the well, which gaged 4390 barrels this morning, to 100 barrels daily, and thus reduce unnecessary drilling at present.

The Texas Co. is holding a great deal of the acreage in the vicinity. It plans to lay an 8-inch welded line from Electra, near Wichita Falls, to Kings Mill, close to the center of the west line of Gray county. Kings Mill is a tank farm center for several of the pipe line companies in the district.

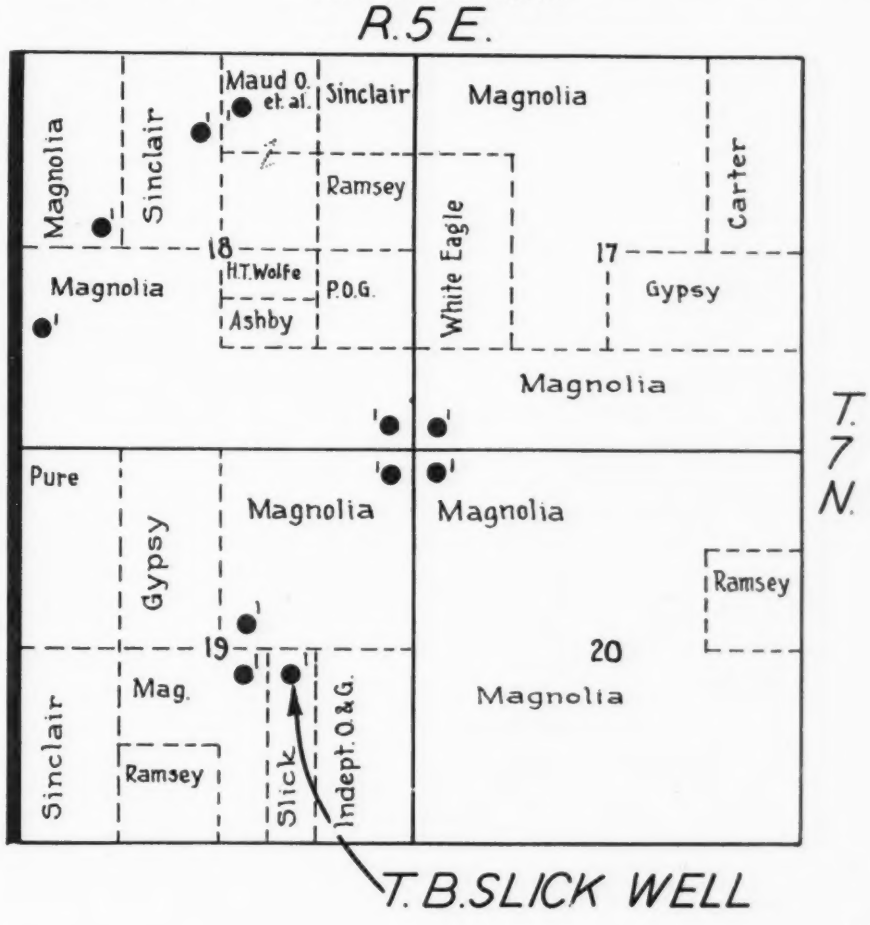
Developments of a more sedate nature included what appears as an extension to the Burbank pool in Osage County, Okla., and the usual run-of-mill completions in the Allen district, together with several light wells in the Seminole area.

The Lewis Production Co. and Oliphant No. 1, in the NE of 22-26N-6E, Osage county, Okla., topped the sand at 2938 feet, getting 300 feet of oil in the hole after drilling to a total depth of 2982 feet. The oil is 38 gravity. The possibilities of the well will be further tested after the big pipe has been pulled and tankage set.

The Sunray Oil Corp. deepened its No. 6 and No. 7 Cully wells with rather surprising results. The Cully farm is in the Allen field of southern Seminole county, Okla. Well No. 6 is in NE SW NE of 19-5N-8E, and

(*Continued on Page* 47)

Map of the immediate area surrounding the new producer of T. B. Slick, Inc. The Wilcox sand discovery well of the Magnolia Petroleum Corp. offsets it to the west. Other producing wells shown are in the Hunton lime



Seminole District Production by Companies and Leases, June 6 and May 30, 1928

BOWLEGS

Company	Farm	S.T.R.	June 6 Wells	June 6 Prod.	May 30 Wells	May 30 Prod.
Amerada	Rascoe	15- 8-6	8	1,370	8	1,445
Atlantic	Baker	1- 8-6	4	300	4	345
Atlantic	Fleet	23- 8-6	3	395	3	180
Atlantic	Grayson	21- 8-6	4	525	4	654
Atlantic	A. Jones	10- 8-6	2	80	2	80
Atlantic	C. Jones	9- 8-6	2	245	2	239
Total Atlantic			15	1,545	15	1,498
Barnsdall	McNac	28- 8-6	1	25	1	23
Barnsdall	Murrow	11- 8-6	4	769	4	801
Total Barnsdall			5	794	5	824
Carter	Bowlegs	15- 8-6	4	1,255	4	1,205
Carter	Burden	23- 8-6	3	230	3	230
Carter	Harjoche	15- 8-6	6	545	6	515
Carter	Hilly	23- 8-6	3	690	3	600
Carter	Jones	11- 8-6	4	935	4	920
Carter	McGeisey	21- 8-6	1	20	1	20
Carter	Walker	15- 8-6	4	510	4	515
Carter	Wise	23- 8-6	11	2,230	11	2,275
Total Carter			36	6,415	38	6,280
Dixie	Culley	11- 8-6	1	90	1	105
Empire	Lacey	15- 8-6	6	462	6	408
Empire	Wise	23- 8-6	2	370	2	330
Total Empire			8	832	8	738
Gypsy	Bowlegs	22- 8-6	1	170	1	132
Gypsy	Bradley	8- 8-6	1	2	1	5
Gypsy	Cumsey	8- 8-6	4	1,190	4	1,120
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	485	4	670
Gypsy	Harjoche	10- 8-6	3	1,435	3	1,097
Gypsy	Jones	11- 8-6	1	0	1	200
Gypsy	Walker	15- 8-6	8	1,635	8	1,537
Gypsy	Wise	23- 8-6	2	300	2	235
Total Gypsy			25	5,317	25	5,096
I. T. I. O.	Barnett	23- 8-6	2	366	2	334
I. T. I. O.	Barnett-B	24- 8-6	1	226	1	204
I. T. I. O.	Billington	22- 8-6	5	678	5	646
I. T. I. O.	Bowlegs	22- 8-6	10	1,328	10	1,501
I. T. I. O.	Davis	22- 8-6	4	1,049	4	1,033
I. T. I. O.	Fay	13- 8-6	9	2,130	9	2,249
I. T. I. O.	Goforth	15- 8-6	12	1,700	12	1,469
I. T. I. O.	Livingston	15- 8-6	10	3,222	10	3,325
I. T. I. O.	Lizzie	13- 8-6	3	619	3	264
I. T. I. O.	Walker	15- 8-6	8	624	8	889
I. T. I. O.	Wilmott	15- 8-6	4	420	4	317
I. T. I. O.	Work	24- 8-6	1	129	1	129
I. T. I. O.	Youngblood	24- 8-6	2	80	2	85
Total I. T. I. O.			78	12,571	78	12,445
Magnolia	Davis	13- 8-6	3	547	3	548
Magnolia	Davis-M	13- 8-6	1	277	1	269
Magnolia	Hammond	10- 8-6	4	874	5	881
Magnolia	Rhodes	12- 8-6	5	3,809	5	3,962
Magnolia	Van Buskirk	9- 8-6	1	266	1	242
Total Magnolia			15	5,773	15	5,902
McCulloch	Bowlegs	22- 8-6	2	400	2	365
Mid-Continent	Baker	10- 8-6	4	1,100	4	1,070
Mid-Continent	Bowlegs	22- 8-6	1	35	1	25
Mid-Continent	Smith	12- 8-6	6	515	6	445
Total Mid-Continent			10	1,650	10	1,540
Minnehoma	Bowlegs	15- 8-6	4	285	4	305
Prairie	Gahagan	23- 8-6	4	307	4	205
Prairie	Harber	10- 8-6	8	2,625	8	2,510
Prairie	Jones	11- 8-6	4	490	4	370
Prairie	Templeton	12- 8-6	6	2,365	6	2,385
Prairie	Whitney	23- 8-6	4	530	4	380
Total Prairie			26	6,317	26	5,850
Pure	Reed	14- 8-6	14	3,272	14	3,280
Pure	Strother-D	14- 8-6	4	715	4	728
Pure	Strother-F	10- 8-6	5	1,737	5	2,231
Total Pure			23	5,724	23	6,239
Roxana	Taylor	16- 8-6	5	117	5	180
Shaffer	Lacy	14- 8-6	3	307	3	367
Sinclair	Bowlegs	22- 8-6	1	90	1	90
Sinclair	Cumsey	10- 8-6	4	2,834	4	2,943
Sinclair	Ellen	11- 8-6	7	1,145	7	1,093
Sinclair	Harjo	14- 8-6	3	370	3	530
Sinclair	Jones	10- 8-6	7	1,455	7	1,870
Sinclair	Taylor	10- 8-6	4	1,736	4	1,745
Sinclair	Taylor-W	10- 8-6	3	1,192	3	1,212
Sinclair	Walker	22- 8-6	4	932	4	925
Total Sinclair			33	9,754	33	10,408
Texas	Reed	14- 8-6	11	2,015	11	2,000
Tidal	Grayson	13- 8-6	4	495	4	485
Tidal	Harjoche	10- 8-6	6	1,415	6	1,505
Total Tidal			10	1,910	10	1,990
Twin State	Jones	11- 8-6	3	63	3	73
TOTAL BOWLEGS			316	63,243	316	63,754

EARLSBORO

Company	Farm	S.T.R.	June 6 Wells	June 6 Prod.	May 30 Wells	May 30 Prod.
Amerada	Anderson	15- 9-5	2	1,050	2	1,065
Amerada	Cowden	4- 9-5	7	1,825	7	1,790
Amerada	Rogers	3- 9-5	2	1,080	2	1,090
Total Amerada			11	3,955	11	3,945
Atlantic et al	Foreman	18- 9-5	1	160	1	160
Barnsdall	Brown	10- 9-5	4	2,293	4	2,427
Barnsdall	F. Bruner	2- 9-5	2	641	2	688
Barnsdall	N. Bruner	10- 9-5	4	1,062	4	1,151
Barnsdall	Cudjo	14- 9-5	1	26	1	26
Barnsdall	D. Davis	11- 9-5	3	328	3	288
Barnsdall	J. Davis	11- 9-5	4	1,066	4	1,296
Barnsdall	M. Davis	11- 9-5	3	95	3	104
Barnsdall	Gibson	9- 9-5	8	2,511	8	3,040
Barnsdall	Hern	15- 9-5	1	3	1	4
Barnsdall	Ingram	1- 9-5	8	3,145	8	3,463
Barnsdall	Pack	10- 9-5	4	202	4	208
Barnsdall	Peter	10- 9-5	4	200	4	197
Barnsdall	Sango	1- 9-5	5	6,248	5	6,671
Barnsdall	Sebolka	15- 9-5	1	293	1	522
Barnsdall	H. Sullivan	11- 9-5	1	18	1	0
Barnsdall	Sull-Harjo	10- 9-5	2	61	2	48
Barnsdall	Watsutke	12- 9-5	4	1,806	4	1,846
Total Barnsdall			59	19,998	59	21,979
Carter	Davis	13- 9-5	2	400	2	490
Carter	Payne	12- 9-5	3	0	3	5
Carter	Sango	1- 9-5	4	950	4	1,015
Total Carter			9	1,350	9	1,510
Continental	Kays	2- 9-5	2	120	2	135
Continental	Spencer	12- 9-5	4	1,225	4	1,235
Total Continental			6	1,345	6	1,370
Empire	Barker	12- 9-5	1	460	1	475
Empire	Edmundson	3- 9-5	3	70	3	280
Total Empire			4	530	4	755
Gypsy	Bruner	10- 9-5	4	2,645	4	2,432
Gypsy	B. Carter	11- 9-5	9	3,255	9	3,257
Gypsy	Earl	16- 9-6	1	17	1	17
Gypsy	Hunick	5- 9-5	1	2,287	1	2,275
Gypsy	Noble	12- 9-5	4	2,780	4	3,020
Gypsy	Peter	10- 9-5	3	427	3	430
Gypsy	Sango	1- 9-5	5	3,362	5	3,802
Gypsy	State	16- 9-5	4	1,125	4	965
Total Gypsy			32	15,898	32	8,217
Independent	Bruner	10- 9-5	4	240	4	350
Independent	Sullivan	10- 9-5	2	111	2	102
Independent	Knapp	8- 9-5	4	2,228	4	2,127
Indep.-Margay	Gaines	11- 9-5	4	830	4	860
Total Indep.			14	3,409	14	3,439
Magnolia	Bryant	9- 9-5	6	1,098	6	1,155
Magnolia	Cowden	4- 9-5	4	70	4	70
Magnolia	Edmundson	3- 9-5	3	30	3	30
Magnolia	Holmsley	11- 9-5	7	425	7	436
Magnolia	Hyde	13- 9-5	1	1,737	1	1,778
Magnolia	Ingram	10- 9-5	1	25	1	25
Magnolia	Lena	10- 9-5	3	80	3	75
Magnolia	Seay	12- 9-5	9	3,416	9	3,210
Magnolia	Simpson	10- 9-5	3	188	3	300
Magnolia	Sparks	11- 9-5	7	632	7	658
Magnolia	Sullivan	12- 9-5	3	90	3	106
Total Magnolia			47	7,791	47	7,843
Mid-Continent	McCumber	9- 9-5	7	110	7	40
Mid-Kansas	Anderson	14- 9-5	3	90	3	120
Phillips	Dunnaway	14- 9-5	1	30	1	30
Phillips	Gram	9- 9-5	2	105	2	135
Total Phillips			3	135	3	165
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,370	5	3,075
Prairie	C. Graham	3- 9-5	2	30	2	35
Prairie	O. Graham	10- 9-5	4	135	4	1,025
Prairie	Stidham	11- 9-5	13	4,040	13	4,155
Total Prairie			25	7,625	25	8,430
Roxana	Bayliss	17- 9-5	1	15	1	12
Roxana	Spencer	12- 9-5	2	1,359	2	921
Total Roxana			3	1,374	3	933
Shaffer	Clark	1- 9-5	5	730	5	732
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	1	50	2	45
Sinclair	Sango	2- 9-5	3	4,000	3	3,915
Total Sinclair			5	4,065	6	3,975
Skelly	Sherry	6- 9-5	1	3,949	1	4,100
Skelly	Spencer	12- 9-5	1	471	1	348
Total Skelly			2	4,420	2	4,448
Superior	Walker	2- 9-5	1	4,119	1	4,085
Texas	Anderson	2- 9-5	7	530	7	555
Texas	Texas Brown	10- 9-5	8	1,930	8	1,905
Texas	Rogers	5- 9-5	4	3,520	4	3,355
Texas	Wilmott	10- 9-5	7	590	7	540
Total Texas			26	6,570	26	6,355
Tidal	Watkins	9- 9-5	7	3,445	8	3,520
Twin State	Barker	12- 9-5	2	107	3	115
Twin State	Hern	2- 9-5	4	1,315	4	1,420
Total Twin State			6	1,422	15	1,535
TOTAL EARLSBORO			278	89,541	279	91,447

LITTLE RIVER

Company	Farm	S.T.R.	June 6 Wells	June 6 Prod.	May 30 Wells	May 30 Prod.
Amerada	Nitey	2- 7-6	3	2,095	3	2,160
Amerada et al	Fore	35- 8-6	2	525	2	530
Total Amerada			5	2,620	5	2,690
Barnsdall	Hotulke	22- 7-6	1	35	1	34
Blackwell	Nitey	35- 8-6	6	3,233	6	3,012
Carter	Fish	36- 8-6	6	1,150	6	1,185
Carter	Jackson	11- 7-6	2	1,925	2	2,095

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, June 6 and May 30, 1928

(Continued from Page 42)

Company	Farm	S.T.R.	June 6 Wells	June 6 Prod.	May 30 Wells	May 30 Prod.
Carter	Larney	24- 7-6	1	100	1	100
Carter	Wilson	12- 7-6	1	100	1	100
Total Carter			10	3,275	10	3,480
Continental	Cosar	36- 8-6	4	1,555	10	1,765
Gypsy	Brown	33- 8-6	1	50	1	50
Gypsy	Conard	22- 7-6	1	100	1	150
Gypsy	Campbell	36- 8-6	2	200	2	210
Gypsy	Denmark	11- 7-6	1	100	1	150
Gypsy	Nungee	1- 7-6	1	25	1	150
Gypsy	Hulhoke	14- 7-6	1	100	1	27
Gypsy	Pottie	35- 8-6	4	1,672	4	1,745
Gypsy	Renton	11- 7-6	3	2,217	3	2,963
Total Gypsy			14	4,464	14	5,445
Independent	Harris	23- 7-6	2	200	2	200
Independent	Davis	2- 7-6	3	2,585	3	2,025
Total Independent			5	2,785	5	2,225
I. T. I. O.	Campbell	1- 7-6	1	51	1	67
I. T. I. O.	Dungan	35- 8-6	3	1,759	3	1,921
I. T. I. O.	MA House	1- 7-6	1	205	1	246
I. T. I. O.	WE House	1- 7-6	1	80	1	81
I. T. I. O.	WE House-B	2- 7-6	4	1,883	4	1,975
I. T. I. O.	Hull	26- 8-6	2	549	1	33
I. T. I. O.	Jackson	1- 7-6	3	1,587	3	1,661
I. T. I. O.	McCulla	1- 7-6	3	737	3	732
I. T. I. O.	Nitey	2- 7-6	6	779	6	903
I. T. I. O.	Phoebe-A	36- 8-6	3	678	3	673
I. T. I. O.	Phoebe-B	36- 8-6	4	162	4	285
I. T. I. O.	Reed	1- 7-6	1	51	1	52
I. T. I. O.	Soketheche	1- 7-6	4	860	4	864
Total I. T. I. O.			36	9,381	35	9,473
Magnolia	Cruse	2- 7-6	4	1,785	4	1,808
Magnolia	Pottie	35- 8-6	3	600	3	708
Magnolia	Reed	22- 7-6	1	116	1	112
Total Magnolia			9	2,501	9	2,628
Mid-Continent	Bruner	11- 7-6	1	100	1	100
Mid-Cont	Smith	5- 7-7	1	30	1	30
Mid-Cont	Wadsworth	36- 8-6	7	750	7	810
Total Mid-Continent			9	880	9	940
W. B. Pine	Hoyecha	26- 8-6	1	420	1	700
Pine et al	Pottie	36- 8-6	2	710	2	805
Total Pine			3	1,130	3	1,505
Pure	Harjo	11- 7-6	1	2,773	1	2,924
Prairie	Chilcoat	25- 8-6	1	650	1	740
Prairie	Dungan	35- 8-6	1	80	1	90
Prairie	House	2- 7-6	4	1,240	4	1,225
Total Prairie			6	1,970	6	2,055
Reiter-Foster	Bunyard	14- 7-6	1	100	1	95
Roxana	Hotulke	23- 7-6	1	71	1	776
Roxana	Caesar	11- 7-6	1	254	1	267
Total Roxana			2	325	2	1,043
Shaffer	Narcome	36- 8-6	1	50	1	0
Sinclair	Cosar	36- 8-6	3	3,500	3	3,020
Sinclair	Teewee	14- 7-6	1	100	1	100
Total Sinclair			4	3,600	4	3,120
Slick	Williams	15- 7-6	1	100	1	100
Snowden-McS	Tiger	13- 7-6	1	640	1	0
Superior	Soketheche	1- 7-6	1	13	1	13
Texas	Coker	1- 7-6	4	1,810	4	120
Texas	Hotulke	23- 7-6	1	125	1	845
Total Texas			5	1,925	5	1,680
Tidal	House	1- 7-6	3	755	3	715
Tidal	Johnson	1- 7-6	1	55	1	15
TOTAL TIDAL			4	810	4	730
TOTAL LITTLE RIVER			129	44,175	128	44,242

SUMMARY

TOTAL LITTLE RIVER	**129**	**44,175**	**128**	**44,242**
TOTAL BOWLEGS	**316**	**63,243**	**316**	**63,754**
TOTAL EARLSBORO	**278**	**89,541**	**279**	**91,447**
TOTAL SEMINOLE	**303**	**53,499**	**303**	**52,567**
TOTAL SEARIGHT	**69**	**14,975**	**70**	**15,116**
GRAND TOTAL SEMINOLE AREA	**1,095**	**265,433**	**1,096**	**267,126**
Average per well		**242**		**244**

Completions in Oklahoma and Kansas, Week Ended June 9, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Schermerhorn et al.	4	NWc NE SW 23-1-3 W	2227-2540	400
Magnolia	3	NEc NW SW 29-1-3 W	T.D. 4015	Dry
Magnolia	1	SWc 5-2-3 W	T.D. 4066	Dry

Cotton County

Jenkins et al	2	NWc SW SE SE 34-1-10 W	T.D. 2612	Dry

Creek County

Smith et al	1	SWc NW SE 33-18-11 E	T.D. 1993	Dry
Creekmore et al	2	SEc NW NW 14-16-11 E	T.D. 2870	Dry
Hull	1	SWc 21-18-9 E	2597-2625 OWD	55
Madden-Madden et al.	1	SWc NW SE 13-15-9 E	3396-3399	720
Elson-Detrick	1	SEc NE SW 27-14-10 E	3296-3318	35

Grady County

Okla. Gas Utilities	9	SEc NE SW 26-5-8 W	2120-2410	37M
Magnolia	4	CSL N½ SW NE 2-4-8 W	T.D. 2400	34M
Magnolia	4	NEc 11-4-8 W	T.D. 2467	3M
Franklin	1	NWc NE SW 17-4-6 W	T.D. 2812	Dry

Grant County

Northern Counties	3	NWc SW SW 23-27-3 W	4192-4200	40&1½M

Kay County

McGraw et al	1	CSE SE 32-29-1 E	T.D. 1460	Dry
Blackwell	1	C SE SW 11-28-1 W	T.D. 855	Dry

Kingfisher County

Gault Brown	1	CNW 26-16-5 W	T.D. 4512	Dry

Murray County

Gilcrease-Mohawk	1	NEc SE NE 20-1-2 E	T.D. 1964	Dry

Muskogee County

Kimsey	2	NEc SE NE 1-14-18 E	T.D. 588	Dry
Carder-Crittenden	2	NWc NE NW NE 6-14-19 E	T.D 862	Dry
Hale Ford	6	CWL E½ NW SE 6-14-19 E	T.D. 514	Dry
Trelkeld et al	2	SEc SW NW SW 6-14-19 E	T.D. 855	Dry
Whaley et al	2	SWc SE NE 6-14-19 E	T.D. 822	Dry
Sommerville	2	NWc SE NE SE 4-13-19 E	T.D. 1560	Dry
Scotch	1	SEc NW NE 2-14-18 E	1117-1135	15

Okfuskee County

Champlin	9	SEc SW SE 15-11-11 E	3476-3493	400

Okmulgee County

Wallace	4	SEc SW NE 14-14-14 E	1043-1063	15
Mussellem	16	CWL NE SW 26-14-14 E	1085-1120	10
Hazelett et al	3	CWL NW NE 33-13-13 E	1340-1403	M10
Devonian-Indep	8	C SW SE 7-15-13 E	T.D. 3025 OWD	Dry

Osage County

Berlin	12	NEc NW NW 24-29-10 E	T.D. 1260	Dry
Pueblo	1	NWc SE SE SW 14-21-8 E	T.D. 2397	Dry
Kewanee	4	SEc NW SW 21-27-6 E	2876-2955	60
Knupp	7	CWL E½ W½ 36-27-11 E	T.D. 1595	2

Payne County

Home	2	NEc SE SW 23-18-5 E	T.D. 4145	Dry

Pontotoc County

McGraw	1	NEc NW 6-3-7 E	T.D. 1430	Dry
Barber	1	SEc NE NW 36-5-7 E	2270-2375	100
Portland Cement	1	NWc NE SE 23-4-7 E	640-661	5M

Pottawatomie County

Gypsy	1	NEc NW NE 16-9-5 E	4353-4355	240
Magnolia	1	SWc NW 13-7-4 E	4070-4181	56
Pierce	1	NEc SW 30-7-4 E	3766-4093	1M
Prairie	1	SEc SE NW 25-7-4 E	4225-4251	1010
Gypsy	2	SWc NE SE 25-7-3 E	T.D. 4554	Dry
I. T. I. O.	1	NEc SE 21-7-5 E	T.D. 4175	Dry
Davis-Detrick et al.	1	SEc NW 10-6-2 E	T.D. 4988	Dry

Seminole County

Mid-Continent	5	SWc 33-10-6 E	4312-4326	960
Barnsdall	8	NEc NW SW 1-9-5 E	4425-4431	611
McCullough	1	SEc SW SE 18-9-7 E	4115-4167	45
Slick	1	NEc SE NE 15-7-6 E	4328-4333	3695
Roxana	1	NEc NW 23-7-6 E	4312-4314	6560
Texas	2	SWc NW SW 8-5-8 E	2655-2725	400
Gypsy	2	NEc SE NW 18-5-8 E	2600-2714	227

Stephens County

Clark-Cowden	1	NEc NW SE 31-1-8 W	1861-1865	6M
Winkler-McQueen	1	SWc NE 35-1-8 W	T.D. 2623	Dry
Maer-Stanforth	1	SWc NW NW 7-2-7 W	T.D. 2303	Dry

Texas County

Connelly et al	1	NEc SW SW 23-2-18 E	T.D. 315	Dry
Trammell et al	1	SEc NW 5-1-19 E	T.D. 280	Dry

Tulsa County

Ellen	5	SWc NW NE NE 25-18-14 E	T.D. 1305	Dry
Sand Springs Home	1	SEc NW NE 15-19-11 E	1665-1698	45

Wagoner County

Crosbie	5	NEc SE 15-16-14 E	T.D. 2560	Dry

KANSAS

Butler County

Empire	2	NWc SE SE 22-27-5 E	2761-2768	50
Rogers et al	17	SWc SE NE 20-26-8 E	T.D. 1625 OWD	Dry
Empire	1	NWc SW NW 22-27-6 E	T.D. 3055	Dry

Coffey County

Finney et al	1	SEc NE 8-22-14 E	1345-1365	2¼M

Elk County

Sherman et al	1	SWc NW NW NW 10-31-10E	1985-2014	100

Greenwood County

Transcontinental	3	NWc NE NE 10-22-10 E	2206-2247	125
Empire	9	SWc NE NW 25-22-12 E	1657-1714	215
Empire	12	NEc SW NE 25-22-12 E	1700-1740	180
Skelly	3	SEc SW NE 30-22-13 E	1661-1718	260
Sheddy et al	1	SWc SE 12-25-12 E	1369-1377	12
Hood et al	2	CNE SE 15-26-11 E	622-645	3½M
Hawley et al	1	NEc SW 4-26-13 E	1528-1532	5M
Shaffer-Howell	1	NWc SW SE 30-22-13 E	T.D. 1717	Dry
McCready	1	SEc SW 34-25-13 E	T.D. 1517	Dry
Swanson et al	1	SEc NW NE 1-28-12 E	T.D. 1600	Dry

Marion County

Skelly	1	SWc NW NW 22-17-4 E	T.D. 2456	Dry
Phillips	1	NWc SE 26-17-4 E	T.D. 2475	Dry
Sherer-Braden et al.	1	SWc NW SE 14-18-4 E	T.D. 2394	Dry
Givens et al	1	SWc SE NE 14-17-4 E	2323-2360	435
Phillips	1	NEc SE NW 15-17-4 E	2356-2404	5
Phillips	2	SWc SE SE 15-17-4 E	2383-2440	40
Independent	1	SEc SW SE 15-17-4 E	2419-2465	60
Phillips	1	NEc NW SW 23-17-4 E	2341-2397	30

McPherson County

Prairie	1	CNE NE 31-18-2 W	2897-2941	8M

Woodson County

Harper	2	CSL SW SW 16-23-14 E	1628-1645	20
Pure	7	SEc NE NE 20-23-14 E	1628-1645	25
Peterson et al	1	SEc SW SW 31-23-16 E	1490-1506	10
Fees et al	1	NWc NE 3-24-16 E	T.D. 1418	Dry
Fields et al	1	SEc SW 19-25-14 E	T.D. 1534	Dry
La Dow et al	1	NWc NE SE 25-26-14 E	T.D. 1543	Dry

Completions in N.E. Central, West, Panhandle and North Texas, Week Ended June 9, 1928

NORTH AND EAST CENTRAL

Brown County

Company	Well No. Farm	Location Survey	Depth	Init. Prod.
Charter	1-Bylor	T&NO	1336-1347	165
Taylor	1-Newton	Honeycutt	1136-1146	2
Henshaw	15-Bush	Kenney	1076-1087	100
Peckham-Nelson	1-Newton	Honeycutt	1131-1145	5
Smith	1-Marr	Gillespie	1177-1188	20
Cranfill-Reynolds	4-Eubanks	Mitchell	1259-1272	30
Cranfill-Reynolds	5-Eubanks	Mitchell	1252-1271	400
Sinclair	1-Eubanks	Mitchell	1209-1230	506
Curry	1-Chambers	Logan	1320-1331	8
Curry	2-Chambers	Logan	1307-1322	3
Modindick	5-Wills	ET	1197-1216	22
Anna Belle	3-Hickman	Benson	1256-1273	80
Humble	12-Kilgore	Delgando	1149-1170	75
Phillips	14-Hickman	Benson	1240-1257	35
Baker	1-Roberts	Cecil	T.D. 521	Dry
Marts	1-Lowe	Coggins	T.D. 1200	Dry
Curry et al	1-Logan	Kerr Co. Sch. Ld.	T.D. 436	Dry
Brock et al	1-Trapp	Irons	T.D. 1575	Dry
Station et al	1-Gordon	Patton	T.D. 1200	Dry
Gilman-McMurray	4-Hickman	Benson	T.D. 1315	Dry

Callahan County

Shoheen	1-Rodford	BOAL	T.D. 1203	Dry
Ungren-Fraser	1-Snider	BBB&C	933-940	3M

Coleman County

Cunningham et al	2-Jennings	Lipscomb	1171-1191	125
Cunningham et al	10-Jennings	Lipscomb	1164-1178	140
Choate Int	1-Stevens	Coleman Co. Sch. Ld.	2100-2103	5
Roth-Faurot	2-Smith	GH&H	2907-2937	70
Gunn Prod	1-Shelton	Henderson	T.D. 1950	Dry

Eastland County

Goodwin et al	1-Parker	Van Norman	2015-2130	17.6M
Goodwin et al	2-Parker	Van Norman	1449-1474	12
Operators	1-Williamson	Van Norman	2990-2993	970
Wylie-Harbin	1-Turner	H&TC	1268-1277	2½M
McLester	1-Gaileg	De Laney	T.D. 3370	Dry

Palo Pinto County

Hill-Ritter	1-Doan	Pickney	T.D. 1587	Dry

Shackleford County

Roeser-Pendleton	3-Cook	ET	T.D. 1274	Dry
Gibson-Johnson	1-Davis	T&P	T.D. 1800	Dry
Treat	3-Mathews	ET	1162-1168	110
Treat	1-Mathews	ET	1167-1177	30
Roeser-Pendleton	60-Cook	ET	1228-1258	150
Roeser-Pendleton	69-Cook	ET	1162-1165	50

Stephens County

Pace-Ward et al	7-Ball	TE&L	3219-3261	4½M
Charter	3-Tomlinson	SP	1715-1719	3½M
Texas Fidelity	2-Cook	E&P	T.D. 3245	Dry
Hanlon	1-Hinston	T&P	T.D. 2340	Dry
Hanlon	1-Vick	T&P	T.D. 3865	Dry
Garrett-Moore	1-Tomlinson	SP	T.D. 3780	Dry

Throckmorton County

Merry Bros. et al	1-Mathews	Carr	T.D. 1005	Dry

Young County

Barkley-Meadows	1-Garvey	TE&L	T.D. 936	Dry
Carpenter	1-Taffin	TE&L	T.D. 540	Dry
Goldsmith	2-Wilson et al.	TE&L	T.D. 600	Dry
Leath-Dillard	1-Hoffman	Averett	T.D. 805	Dry
Panhandle et al	3-Pitman	Mathews	T.D. 765	Dry
Parks	1-Hawkins	GB&N	T.D. 720	Dry
Petroleum Prod	1-Henning	TE&L	1097-1091	25
Kleiner-Hill-West	11-Langston	TE&L	560-585	40
Pennell et al	9-Boone	BBB&C	474-492	60
Riggs	10-McKinley	TE&L	490-516	25
Atlantic-Roberta	5-Keen	TE&L	803-815	5
Texas	7-Stewart	Dawson	782-810	27

NORTH TEXAS

Archer County

Company	Well No. Farm	Location Survey	Depth	Init. Prod.
Young	1-Taylor	SP	419-428	5
Underwood Drlg	2-Wilson	H&TC	1226-1629	20
Rayzar et al	1-Tuberville	Carson	1478-1487	10
Gilliland	1-Niemeyer	TE&L	1402-1405	55
Panhandle-Johnson	4-Garvey	TE&L	805-810	12
Magnolia	1-Parkey	H&TC	T.D. 1855	Dry
Texas	1-Jackson	Alridge	T.D. 1606	Dry
Golhke	6-Wilson	Geraldine	T.D. 1573	Dry
Burns-Continental	1-Wilson	Walker	T.D. 1602	Dry
Wright et al	5-Wilson	Scott	T.D. 1343	Dry
Shappell	1-Walsh	TE&L	T.D. 1612	Dry
Sun	19-Farmer	Bell Co. Sch. Ld.	T.D. 1470	Dry
Texas Unity	1-Cowan	Jefferson Co. Sch. Ld.	T.D. 1209	Dry
Consolidated	1-Herron	Garvey	T.D. 1003	Dry

Wichita County

Texas	1-Mango'd	Castleman	T.D. 2002	Dry
Texas	1-Waggoner	GC&SF	1351-1353	15
Trout et al	1-Hoge et al.	KWVFL	T.D. 1825	Dry

Wilbarger County

Golding-Cochran	2-Waggoner	H&TC	2357-2360	80
Phillips	8-Waggoner	H&TC	2302-2307	19
Texas	353-Waggoner	H&TC	2296-2309	200
Consolidated	1-Parket	H&TC	T.D. 2774	Dry
Petroleum Prod. et al.	3-Waggoner	H&TC	T.D. 2652	Dry

PANHANDLE

Gray County

Massie	2-Chapman	H&GN	2790-2800	1180
Empire	1-Holmes	I&GN	2385-2480	20M
Empire	1-Daur	H&GN	3010-3125	55
Empire	1-Case	H&GN	2575-2655	36M
Texas	2-Davis	I&GN	3085-3310	580
Edwards et al	1-Case	H&GN	T.D. 3232	70M
Gulf Prod	2-Holmes	I&GN	T.D. 3202	1212
British	1-Meers	I&GN	T.D. 3200	58M
Texas	1-Davis	CH&B	T.D. 2818	604
Plains Drlg. et al	1-Chapman	H&GN	T.D. 2780	95

Hutchinson County

Golden Eag'e	1-Bosh	ET	2260-2510	85M
Skelly	2-Armstrong	Bellows	3035-3527	7M
Morton et al	1-Whittenburg	H&TC	2391-3000	10M
Gulf Prod. et al	40-Dial	Rings	2952-3047	180

WEST TEXAS

Borden County

Dixon Creek	1-Johnson	T&P	T.D. 3552	Dry

Crockett County

Grayburg	8-Halff	I&GN	T.D. 1215	Dry

Howard County

Goodly	4-Hooks	W&NW	1840-1860	150
Pure	4-Chalk	W&NW	1720-1722	130

Pecos County

Marland-McMann	16-Yates	TC	1026-1232	1300
Humble	8-Smith	TC	1363-1500	70

Reagan County

California	4-Univ.	Univ.	3093-3105	20

Winkler County

Magnolia	8-Hendricks	PSL	T.D. 2980	485
Magnolia	5-Hendricks	PSL	T.D. 3189	50
Humble	13-Hendricks	PSL	T.D. 2841	2816
Atlantic-Collett	5-Hendricks	PSL	T.D. 2793	22000
Atlantic	7-Hendricks	PSL	T.D. 2828	7064
Atlantic	1-Hendricks	PSL	T.D. 2978	50M&700

Completions in North Louisiana and Arkansas, Week Ended June 7, 1928

Louisiana—Webster Parish—Cotton Valley

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	Camp No. 1	36-23-10	3263	salt water abn.

Bossier Parish—Cartersville

Ark. Nat. Gas Co.	Crawford No. 1	6-22-11	3081	6M gas
J. R. Bahan	Bolinger No. 1	38-23-11	3053	30M gas

Webster Parish—Spring Hill—Cartersville

Magnolia Pet. Co.	Baker No. 2	35-23-11	3078	11M gas

Caddo Parish—Pine Island

Dixie Oil Co.	Clark et al. No. 9	14-21-15	3988	165 bbls.

Bossier Parish—Belcher

Triangle Drilling Co.	Bulkley No. 1	9-20-13	2700	dry, aband.

Claiborne Parish

El Dorado Chief Oil Co.	Jones No. 1	8-20-6	2600	dry, abnd.

Bossier Parish—Elm Grove

H. S. Goodwin, Tr.	Curtis No. 3	2-16-13	2990	salt water abd.
David B. Johnson	Caddo Bossier Ind. No. 1	13-17-13	2640	dry. abd.
Sligo Syndicate	H. L. Skannal No. 2	14-17-12	1715	2M gas

Union Parish

Company	Well	Location	Depth	Yield
Industrial Gas Co.	E. Harris No. 1	24-20-3E	2190	7M gas

Ouachita Parish

Jordan Drilling Co.	Cole No. 1	50-18-4E	2203	4M gas

Richland Parish

Ark. Nat. Gas Co.	Thomason C-3	21-16-6E	2465	60M gas
Ark. Nat. Gas Co.	Thomason C-4	21-16-6E	2466	50M gas

East Texas—Harrison County—Waskom

Nick Barbare	Furrh No. 3	Lipscomb HRS	2382	1M gas

Arkansas—Smackover

Skelly Oil Co.	Umsted No. 10	33-15-15	2365	75 bbls.
Frank Wood, Tr.	Spahr No. 2	34-15-15	2025	15 bbls.

Rainbow City—Union County

Lion O. & R. Co.	Rowland No. 3	15-17-14	3229	2500 bbls.
Magna Prod. Co.	Dumas No. 4	11-17-14	3274	2000 bbls.
Pure Oil Co.	E. F. Gregory No. 5	10-17-14	3232	1100 bbls.
Pure Oil Co.	J. M. Gregory No. 1	11-17-14	3251	715 bbls.
Pure Oil Co.	W. E. Gregory Estate No. 1	15-17-14	3210	4447 bbls.

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended June 9, 1928

	June 9 Week Ended — Loc.	Rigs	Drg.	S.D.	Total	June 2 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	2	8	8	..	18	2	7	7	..	16
Other Osage	2	7	17	5	31	3	7	19	4	33
Bristow-Cushing	1	4	35	6	46	1	7	28	10	46
North Oklahoma	7	3	48	29	87	7	6	47	29	89
South Oklahoma	12	7	91	28	138	12	7	99	22	140
Muskogee	..	10	48	19	77	..	9	51	17	77
Okmulgee-Bristow	12	33	73	24	142	12	27	74	22	135
Seminole Dist.	24	38	164	15	241	19	40	160	19	238
Total Oklahoma	60	110	484	126	762	56	110	485	123	774

	June 9 Week Ended — Loc.	Rigs	Drg.	S.D.	Total	June 2 Loc.	Rigs	Drg.	S.D.	Total
KANSAS	37	53	159	52	301	38	53	168	55	314
TEXAS										
Central	..	101	275	153	529	..	105	257	147	509
Panhandle	..	64	50	71	185	..	62	82	70	214
N. Central	..	62	93	28	183	..	55	105	27	187
West	..	106	210	156	472	..	105	219	145	469
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	334	653	427	1,414	..	328	688	408	1,424
New Mexico	..	9	23	22	54	..	9	21	23	53
GRAND TOTAL	97	506	1,319	627	2,549	94	500	1,362	609	2,565

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended June 9, 1928

OKLAHOMA

Caddo County

Company	Well No. Farm	Location
English Drlg.	4-Cutshall	NEc NW SE 5-5-9 W

Carter County

Schermerhorn et al.	5-Crockett	SWc NE SW 23-1-3 W

Creek County

Lyons	1-Harjo	SWc SE SW 7-14-10
Tibbens	1-Curtis	NEc SW 29-15-9
Madden-Madden et al.	1-Wright	NWc SW SE 13-15-9
Madden-Madden et al.	1-Harry	SEc NE SW 13-15-9
Whitten-Wilcox	4-Wrightman	NWc SE NW 11-17-10
Irelan et al.	3-Taconey	NEc SW NW 11-17-10
Kiyoco	1-Selftwin	SEc NW NE SW 36-17-9

Cotton County

Cullum-Jenkins	3-Priddy	NEc NW NE NE 3-2-10 W
Cullum-Jenkins	3-Smith	NEc SW SE SE 34-1-10 W

Garfield County

Champlin-Marland	1-Stone	NWc SE 24-24-3 W

Grady County

Kahl et al.	1-Petty	SEc NE 14-4-8 W
Meridian	3-Woods	NWc SW NE NW 2-4-8 W
Sultan et al.	1-Jelks	SEc NE SE 22-5-7 W

Hughes County

Furhman	1-Buck	NEc NW SE 26-9-10 E

Jefferson County

McGinley-Sigler	1-Pfile	NEc NW NW 20-7-5 W
Leash-McCall	2-Peniston	SEc SW 17-7-5 W
Leash-McCall	1-Peniston	SWc SE 17-7-5 W
Leash-McCall	4-Peniston	NWc NE SE SW 17-7-5 W

Kay County

Parrish et al.	3-Buesing	SEc NW 9-27-1 E
Northern Counties	1-Jennings	C NW SE 19-27-1 W

Logan County

Tibbets-Bond et al.	1-Donahoe	SWc NW SE 21-18-2 W

Muskogee County

Mussellem	1-Cobb	SWc SE NW NE 5-13-19 E
Scotch	2-Crabtree	CNL SW NE 2-14-18 E
Kimsey-Sanderson	1-Lot-18, Blk-V	SW NW NW 36-15-18 E
Kimsey	1-Blk-358	SEc NE NE 35-15-18 E
Buckles et al.	8-Barnett	NEc SE 8-15-15 E
Keller-Ingram	2-Spaulding	SEc NE SW 3-15-18 E

Okmulgee County

Chief Drlg. et al.	1-Bullett	SWc NE 27-12-12
Colvin et al.	1-Anthony	NWc SW NW 35-12-12
Hazlett	6-Tucker	SEc NW SE 2-13-14 E
Wallace	10-Colbert	NEc NW SE 14-14-14

Osage County

Peters et al.	2	NWc SW 28-24-9
Kewanee	12	NEc SE NE 28-27-6
Kewanee	11	NWc SE NE 28-27-6
Kewanee	10	SEc NE SW 21-27-6

Pawnee County

Magnolia	1-Coats	SEc NE NW 15-20-6

Pontotoc County

Westheimer-Daube	3-Wade	NEc SW NE 19-5-8 E

Pottawatomie County

Magnolia	1-Ingle	NWc NE NE 34-7-4 E
Phillips	1-Cherry	SWc NW NE 25-7-4 E
Mid-Kansas	1-Tarter	SEc SW NW 25-7-4 E
Gypsy	1-Cherry	SEc NE NW 25-7-4 E
Gypsy et al.	4-McGee	SWc NE 23-7-4 E
Home	1-Townsite	SEc SW 14-7-4 E

Seminole County

Louisiana	4-Reed	NWc NE NE 18-5-8 E OWD
Louisiana	2-Punluste	NEc SW SW 8-5-8 E OWD
Slick	1-Sillah	SWc 12-5-7 E
Pure	2-Harjo	NWc SW NE 11-7-6 E
Magnolia	1-Denby	NEc SE NW 11-7-6 E
Pine	1-Coker	NWc SW SW 1-7-6 E
Skelly-Atlantic	4-Sherry	NEc NW SW 6-9-6 E
Carter	4-James	NWc NE SW 6-9-6 E
Carter	3-James	SWc NE SW 6-9-6 E
Carter	2-James	NEc SW SW 6-9-6 E
Carter	1-James	NWc SW SW 6-9-6 E
Gypsy	9-Sango	SEc NW SE 1-9-5
Mid-Continent	1-Nevins	SEc 32-10-6 E

Stephens County

Hawks-Ware	2-Florence	NWc NE SE 11-3-6 W
Franklin	5-Fobb	NWc NE NE SE 12-2-8 W
Pace et al.	4-Wilson	SEc NE 12-2-8 W
Owen-Wood	10-Massey	NEc SE SE NW 12-2-8 W
Murphy	14-Cobb	SEc NE NW SW 12-2-8 W
Insligs-Russell	1-Perry	NEc SW NW 16-1-6 W
Hupp-Duff	4-Fee	SEc NW SW NE 34-1-8 W

Tillman County

Bray et al.	1-Barker	C SE NW 9-1-15 W

Tulsa County

Sheridan	1-Jenkins	NWc SW 10-16-12 OWD
Ellen	6-Island	NWc NE NE 25-18-14
Altitude	4-Perryman	NWc SW SW SW 30-19-13
Underwood et al.	5-Brown	NEc SE SE NW 30-19-12
Home	2-Jones	SWc NW NE 15-19-11

Wagoner County

Lowerre	1-Smith	NWc SW SW 14-16-15

KANSAS

Butler County

Shawver et al.	1-Huntler	SEc SW 6-27-7 E

Chautauqua County

Elmwood	1-Hilton	NEc NW 13-32-9 E

Elk County

Elk	2-Perkins	C SE 33-29-9 E OWD
Denton et al.	1-Shaw	SEc NE NE 9-31-10 E
Hood et al.	1-Call	C SE NE 16-31-10 E

Greenwood County

Company	Well No. Farm	Location
Amerada	1-Luthi	SWc NW SW 29-22-13 E
Simmons et al.	4-Schwab	SEc NE SE 30-22-13 E
Simmons et al.	1-Calvert	NWc NE 1-23-12 E
Griffith et al.	1-Claycomb	NEc 36-24-8 E

Marion County

Madison et al.	1-Schwindler	NEc SE NW 9-17-4 E
Phillips	1-Harwood	SWc NW 13-17-4 E
Givens-Hershey	2-McCoy	SEc NE 14-17-4 E
Johnson et al.	1-McCoy	NEc NW SE 14-17-4 E
Phillips	2-McCoy	NEc SE 14-17-4 E
Givens-Hershey	1-Faulke	SEc SW NE 14-17-4 E
Lariaux et al.	1-Dunlop	NWc SW 24-17-4 E
Youker et al.	1-Fronta	SWc NW NE 21-17-4 E

TEXAS

NORTH AND NORTH CENTRAL

Anderson County

			Survey
Humble	2-Jones	....	Roberts

Archer County

Burnes et al.	1-Staples	Blk-42	Pasture
Consolidated	1-Wright	Sec-2435	TE&L
Gilliland	2-Neimeyer	Sec-2415	TE&L
Texas	1-Conner	Abstract-452	Tomlison
Kellaher et al.	1-Andrews	Abstract-264	Lockhart
Wright et al.	5-Wilson	Abstract-859	Scott
Lewis-Barnsdall	1-Abercrombie	Sec-28	Harris
Hines et al.	1-Netherton	Sec-104	ATNCL
Rose et al.	2-Wright	Sec-17	DCSL

Brown County

Henshaw	15-Bush	Blk-624	Kenney
Green	1-Hill	Sec-8	Walker
Moore	1-Munselle	Blk-3	Arenbeck
Scrivnor et al.	1-Suttles	Blk-140	Mitchell
Jay Hawk	7-Boyson	Blk-4	Williams
Kerr et al.	1-Boyson	....	Mullens
Logan et al.	1-Gilliam	Blk-53	BBB&C
Daniels et al.	1-Looper	Blk-645	Padillo
Daniels et al.	2-Payne	Sec-31	HT&B
Campbell et al.	1-Sweet	Sec-59	HT&B
Bradstreet et al.	12-Stout	Blk-155	Smith
Bradstreet et al.	2-Eubanks	Blk-141	Mitchell
Sinclair	2-Eubanks	Blk-141	Mitchell
Humble	16-Hodnett	Blk-784	Harris
Humble	13-Kilgore	Sec-3, Blk-789	Delgando
Gordon-White	1-Mauldin	....	Mosley
Smith et al.	2-Breneke	Blk-664	Sprague

Callahan County

Hays	2-Hickman	Sec-148	BBB&C
Ungren-Fraser	1-Snider	Sec-142	BBB&C
Mortimor et al.	1-Hickman	Sec-2	I&GN
Wentz	1-Williams	Sec-25	D&DA

Cherokee County

Nichols-Rowan	1-Schleither	....	Walters

Cottle County

Exploration	3-Matador	Sec-46	Stephens

Coleman County

Byrd-Kitchiny	1-Witcher	Sec-4, Blk-665	Scott
Collins et al.	1-Miller	Sec-23	HT&B

Eastland County

Bennett-Smith	1-Cade	....	Roberts
Fisher	1-Stubblefield	Sec-16	ET

Henderson County

Foster et al.	1-Richards	....	Burton

Jack County

Wylie-Blinebry	1-Shipley	Sec-19, Blk-1	Henderson Cty. Sch. Land

Shackleford County

Cranfield-Reynolds	1-King	Sec-1, Blk-14	T&P
Treat	4-Mathews	Sec-33	ET
Skelly	3-Mathews	Sec-32	ET
Tannehill et al.	3-Mathews	Sec-27	ET

Stephens County

Hanlon et al.	1-Burke	Sec-8, Blk-6	T&P
Edison	2-Smith	Sec-39, Blk-6	T&P
Texas-Pacific	11-Graham	Sec-81, Blk-4	T&P

Wichita County

O'Neal	1-Burnett et al.	Sec-16, Abst-436	Carrol

Wilbarger County

Waggoner	2-Waggoner	Sec-24, Blk-4	H&TC
Lawson	5-Waggoner	Sec-30, Blk-4	H&TC
Phillips	12-Waggoner	Sec-44, Blk-4	H&TC
Waggoner	5-Waggoner	Sec-32, Blk-4	H&TC
Staley-Wynn	1-Waggoner	Sec-32, Blk-4	H&TC
Consolidated	2-Waggoner	Sec-5, Blk-5	H&TC

Young County

Chrisite-Sharp	1-Dunagan	Sec-157	TE&L
Petroleum Prod.	1-Wilson et al.	Sec-67	TE&L
Texas	8-Stewart	....	Dawson
Allen	1-Sims	Sec-610	TE&L
Reed-Wootten	2-Kean	Abst-1876	Porter
Perry et al.	1-Burdick	Sec-2714	TE&L
Cunningham et al.	11-Hawkins	Sec-1914	TE&L
Steed et al.	1-Smith	Sec-1365	TE&L

WEST TEXAS AND PANHANDLE

Carson County

Skelly	9-Schaffer	SE NE NE Sec-87, Blk-4	I&GN

Crane County

Church-Weekley	s-Univ	SWc Sec-39, Blk-30	Univ.

(*Continued on Page 46*)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended June 9, 1928

(Continued from Page 45)

Gray County

Company	Well No. Farm	Location	Survey
Empire	2-Archer	Sec-174, Blk-3	I&GN

Howard County

Henshaw	1-Eason	Sec-6, Blk-32	T&P

Irion County

Murphy	1-Thompson	Blk-1, Corner sec-5-6-11-12	SP
Mertzon	1-Pock	Sec-24	GC&SF
Whitmer	2-Myer	Sec-1127	GC&SF

Moore County

Skelly	3-Armstrong	West & North of	Proctor

Pecos County

Roxana	1-Smith	NEc Sec-38, Blk-194	GC&SF
Cowboy Evans	1-Byron	CWL NW Sec-114, Blk-11	H&GN

Sutton County

Company	Well No. Farm	Location	Survey
Phillips	1-Hollarman	SEc NE Sec-25	CCSD

Winkler County

Southern Crude	T-67-3A4-Hendricks	NEc Sec-4, Blk-B-12	PSL
Cranfill-Reynolds	1-Hendricks	SW NW NW Sec-28, Blk-B-5	PSL
Skelly	6-Hendricks	SE SW SE Sec-40, Blk-36	PSL
Landreath Prod.	4-Hendricks	CEL W½ SW Sec-40, Blk-26	PSL
Atlantic	2-Hendricks	NE NW NE Sec-44, Blk-26	PSL
Flandell	1-Carter	NWc SW SW SW Sec-26, Blk-B-3	PSL
Southern Crude	T-67-3B5-Hendricks	NWc SW Sec-33, Blk-26	PSL
Southern Crude	T-67-3B4-Hendricks	NW SW SW Sec-33, Blk-26	PSL
Humble	8-Hendricks	NE SE NE Sec-32, Blk-26	PSL

Decline in Production Observed In Long Beach Field

LOS ANGELES, June 9

THE production curve at Long Beach is showing a tendency to flatten out. The field decline is now between 7,000 and 8,000 barrels daily average each week, and in order to show an increase it is necessary that at least 10,000 barrels come from new wells each week.

During the past week, only five new producers were added out of seven completions, two having to be killed for new cementing jobs. The new wells furnished about 8,000 barrels new production. A late check of the field shows nine wells ready for production tests, and 17 cemented and passed the water shut off test. Eighteen wells are drilling below 6000 feet and 41 others are drilling between 5000 and 6000 feet. There are 190 wells actively drilling in the field, at various stages.

The outstanding feature of operations at Long Beach the past week, was the entry of Standard of California into the field when the company took over 40 acres southwest of the Los Cerritos area and across the Pacific Electric tracks from the present activity. The 40 acres were secured from Geo. A. Langstaff of Whittier. Turning this acreage finances drilling a well by Langstaff on an adjoining 10 acre tract. A well was once drilled near the Langstaff hole slightly below 4000 feet and it was reported at that time that cores were favorable. It is now thought that this new territory is separated from the Los Cerritos area by a fault and that there is a possibility of a new sand being uncovered.

The Texas Co. this week completed a Long Beach well for only 400 barrels of oil and 7,500,000 cubic feet of gas, on top of the structure, but efforts are being made to bean in the gas and increase the oil output. Union's Community 16 also showed a steady increase in gas output until it was making 11,000,000 cubic feet this week in addition to 4000 barrels of oil. The action of these two wells, as well as other new ones in the field, indicates that there is still plenty of gas in the formation.

At Rincon, there are 16 wells on production, making around 3000 barrels over all. During the past week, two wells were completed by Pan American for a combined production of only 600 barrels. These wells were in what is known as the shallow sand. Another Doheny company, Petroleum Exploration Co., has taken a lease at Mussel Rock, a mile and a half northwest of the present Rincon activity on the ocean front, and a derrick is being erected. Three wells are already drilling in this new area. The theory is that the fault extends into the ocean at Rincon and, on a straight line, striking land again at Mussel Rock, a jut into the ocean at that point.

Associated Oil Co. had bad luck this week with its deep test, Lloyd 100, at Ventura Avenue when the drill stem was twisted off with the bottom of hole at 7957 feet. Top of the pipe is at 7535 feet. The overshot was frozen slightly above this point. Late in the week oil was being circulated in an effort to loosen the overshot. No new wells were completed, and other operations in the field were without interest.

PACIFIC EASTERN (Gulf interests) this week began swabbing its Fruitvale No. 2 near Bakersfield with bottom of hole at 3861 feet and 10-inch cemented at 3827 feet. There is not sufficient gas to make a flowing well, but late in the week it was making about 200 barrels of 23.3 gravity oil, and will be placed on the beam.

This new well is very similar to Fruitvale No. 1, the discovery well, which is still making around 200 barrels on the pump, although the first well has only about 15 feet of oil sand. The company's No. 3 was drilled to 3930 feet and plugged back to 3880 feet. A strip of 10¾-inch is cemented at 3830 feet, with about 40 feet of oil sand to produce from. This well probably will be tested in a few days.

There is some renewed work at Santa Fe Springs with several strings running, mostly working over old wells. Wilshire's deep test is reported to have reached a total depth of nearly 5800 feet, with some gas showings. All information is being withheld and scouts are depending on rumors to secure information. Union has started a new well on its Bell lease and it is rumored that other companies are making ready to start new work, especially if the Wilshire test should make a real showing.

Heat Exchangers

M. W. KELLOGG CO.
7 Dey Street ~ New York

Kansas City, Mo. . . . . 700 Baltimore Ave.
San Francisco, Cal. . . . . 444 Market St.
Los Angeles, Cal. . . . 329 Petroleum Sec. Bldg.

Slick Finds Big Pay In Wilcox Offset

(*Continued from Page* 41)

No. 7 in the NW SE NE of 18-5N-8E. The former, when deepened, was making 430 barrels from the sand at a total depth of 2622. After deepening No. 6 produced 75,000,000 cubic feet of gas a day with but a spray of oil. No. 7 performed in a similar manner, changing from 420 barrels of oil a day to 25,000,000 feet of gas with a small show of oil after being deepened from 2595 to 2625. A stratified condition of the sand is likely responsible for the unusual circumstance of finding oil on top of the gas. In spite of their size, rock pressures in the Allen field do not last long, and it is probable that the wells will soon be producing oil again.

Sumner county kept Kansas in the picture with a 500-barrel well belonging to Harris & Haun, in the center of the NW NE of 23-34S-2E. Producing from the sand at 3791-3792, the well started off at 20 barrels of oil and 100,000 cubic feet of gas an hour.

Tanker Rates

NEW YORK, June 11.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrel:

	Crude &/or Fuel	Refined Oil
Calif. to U.K. or Continental ports*	28/-	32/6
Gulf to U.K. or Continental ports*	16/6-	19/6
North Atlantic to U.K. or Continental ports*	13/6	16/6
Calif. to North Atlantic ports (not E. of N.Y.)	52c	85c
**Gulf to North Atlantic ports (not E. of N.Y.)	18c	36c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading, 4c per bbl. additional.

Oil City Gets Bradford Crude

OIL CITY, Pa., June 9.—Bradford grade Pennsylvania crude oil is being moved at the rate of 2500 barrels a day to refiners in the Oil City district. Until now all Bradford district crude has been taken by refineries in the Olean, N. Y., Bradford and Warren, Pa. districts. Bradford crude production has been increased the last few years by flooding operations. This crude commands a premium over the regular grade of Pennsylvania crude.

Tank Car Shipments from Winkler Confined to 5 Companies

Staff Special
HOUSTON, June 8

TANK car movements of Winkler crude over the Texas & Pacific railroad from Ward county loading racks averaged 57,825 barrels daily in May.

More than 42 per cent of the total movement was by the Southern Crude Oil Purchasing Co., arm of the Pan American group, to associated interests and to buyers in the New Orleans district.

The next largest shipper was the American Petroleum Co., of the J. S. Cullinan group, which handled about 20 per cent of the movement. The American handles oil purchased in the field in addition to crude controlled by the affiliated Republic Production Co.

Independent Oil & Gas Co., and Landreth Production Co., both shipping under contract to tank car buyers, accounted each for about 15 per cent of the total movement.

Shell Pipeline Corp., companion company to the Roxana Petroleum Corp., materially reduced its tank car shipments in anticipation of putting into use its new trunk pipe line from west Texas to Healdton, Okla. The line was completed early in June but cannot be used to its full capacity of 30,000 barrels daily until installation of additional pumping stations has been completed.

A sub-joined table gives details of the movement of Winkler crude in tank cars.

Additional movement included the handling of 16,621 barrels to concrete storage at Monahans, divided between the Shell and Landreth companies as follows: Shell, 14,748 barrels daily average, and Landreth, 1873 barrels, daily average.

Runs through trunk pipe lines were as follows: Atlantic Pipe Line Co., to Midland, 40,275 barrels daily; Humble Pipeline Co., to McCamey, 24,613 barrels; Shell Pipeline Corp., to McCamey, 7809 barrels.

Since May 5 the Winkler producing area has been limited to maximum daily production of 150,000 barrels under the prorating order of the Railroad Commission of Texas. Much of the time, however, it has been producing 10,000 to 15,000 barrels daily below the allowable quantity because certain acreage units in the Hendricks field were unable to yield the quantities of crude allocated them under the combined acreage and potential production yardstick.

It has been indicated that the railroad commission will approve a recommendation of its advisory committee of operators to raise the allowable production to 175,000 barrels daily. Belief is that with the new limit in effect actual production will not exceed about 150,000 barrels, because of declines on certain of the 40 acre units.

The field as a whole continues to show high potential daily production as estimated on the basis of 1-hour and 2-hour gages for prorating purposes. The June 1 total potential, it will be recalled, was estimated at 839,786 barrels daily.

A number of big wells that will further increase Winkler potential have been completed in the Hendricks field since June 1.

Roxana Petroleum Corp.'s D-6 Hendricks, Sec. 41, Block B-5, near the southwest edge of the field, flowed 355 barrels in one hour, open, at 2692-2709 feet.

Atlantic Oil Producing Co., and J. D. Collett, completed F-3, in Sec. 40, Block B-26, flowing 640 barrels an hour through 1½-inch choke at 2745-2748 feet. F-6 of the same partnership made 500 barrels an hour at 2733-2756 feet.

Cranfill & Reynolds Inc., completed D-1 on a 20-acre tract near the northwest corner of Sec. 33, Block B-26, nearly a mile northwest of its famous "C" wells, making 520 barrels the first hour at 2868-2888 feet. This well was later reported making some water with the oil.

Humble Oil & Refining Co.'s C-5, Sec. 32, Block B-26, flowed 350 barrels the first hour at 2810-2850 feet.

DETAIL OF WINKLER TANK CAR SHIPMENTS

Shipper-Destination	May daily average in Bbls.
Southern Crude Oil Purchasing Co.	
Mexican Petroleum Corp., New Orleans	6,738
Standard of Indiana, Whiting	5,607
Standard of Indiana, Sugar Creek	2,088
Standard of Indiana, Wood River	2,253
Chalmette Petroleum Corp., New Orleans	4,437
Liberty Oil Co., Ltd., New Orleans	1,991
Miscellaneous loadings	204
Total average	23,318
American Petroleum Co.	
American Petroleum Co., Houston	2,046
Louisiana Oil Refining Corp., Shreveport	8,618
Rio Grande Refining Co., El Paso	1,129
Cooper Petroleum Co., Houston	24
Total average	11,817
Landreth Production Co.	
Crystal Oil Refining Corp., Shreveport	2,642
New Orleans Refining Co., New Orleans	5,150
Roxana Petroleum Corp., Texas City	1,148
Total average	8,940
Independent Oil & Gas Co.	
Louisiana Oil Refining Corp., Shreveport	176
New Orleans Refining Co., New Orleans	8,655
Total average	8,831
Shell Pipeline Corp.	
Roxana Petroleum Corp., East Chicago	169
Roxana Petroleum Corp., Texas City	4,750
Total average	**4,919**

History is Basis of Newspaper Advertising Campaign

CLEVELAND, June 9

GOOD will newspaper advertising based on historical incidents is being used by the Louisiana Oil Refining Corp. in Ohio, Louisiana, Mississippi, Texas and Arkansas to gain favor and promote the sale of Loreco gasoline and motor oils and Veedol motor oils, for which it is distributor.

The idea of the advertising, which is in two series—one series for Ohio and the other for the southern territory—is that each piece of copy shall be so localized and interesting that it will impress on readers' minds the fact they are living in an interesting community and also that Louisiana Oil Refining Corp. has brought that fact to their attention.

Little mention is made of the merits or quality of the Loreco brand goods, but the tie-up is with Loreco service stations, as shown by the following quotation from an advertisement in the southern series copy:

"Here, too, Smiling Loreco Service invites the motorist to one of Louisiana's most interesting towns."

Each advertisement in both series carries the Loreco circle-diamond trade mark and in the southern copy attention is called to the company's 1928 highway guide, a copy of which may be obtained at any of its service stations.

The southern series advertisements were uniformly three columns by 11 inches. The Ohio service was four columns by 9 inches. Twenty southern and 12 Ohio newspapers carried the copy. The combined circulation of the 32 newspapers is approximately 252,000.

There are 10 pieces of copy in the southern series. The first, which was published April 27, was based on the explorations of the Frenchman, Bienville, for whom Bienville parish, La., was named. Others deal with spots connected with pioneer days and later with sites of battles in the war between the states. The series will be completed June 29.

The Ohio series contains 12 pieces of copy, the first of which was published March 30 and the last is to be run June 15. The dominating feature of the Ohio copy is a drawing of an open book which has this title, "Glimpses of Ohio History." On the left half page of the open book is a sketch of some person who was connected with the early history of Ohio or a drawing of some historical place or event.

In one piece of copy is a sketch of George Washington. On the right hand page of the book in the copy is the story of the Society of Cincinnati, of which Washington was the first president. This copy also has current interest because it relates that Tammany Hall was formed by the opponents of the Cincinnati society, which was accused of organizing for the perpetuation of aristocracy. The basis of Tammany was "pure democracy."

Cincinnati was named by a member of the society, it is pointed out in the advertisement which concludes: "In the city of Cincinnati more than twenty gasoline and motor oil service stations bear the friendly red and white Loreco emblem of service. Many of these stations are manned by soldiers of the World War who, figuratively speaking, have returned to the plow."

Copies of the advertisements of each series were bound and distributed to Loreco dealers and stations for posting during the week; the advertisements are to appear in the local newspapers.

GASOLINE
LORECO
MOTOR OIL
GLIMPSES OF OHIO HISTORY
EXAMPLE of earthen mound, only memorial of the prehistoric race that inhabited Southwestern Ohio land of romance, rich in history and legend.
A LITTLE JOURNEY TO REALMS OF THE PAST
Who knows to what heights of civilization our prehistoric ancestors may have risen, or what was their ultimate fate, since in their going they left nothing to tell us of their social system. But as memorials to their industry they left interesting earthen formations which, although shrouded in uncertainty as to their original purpose, betray signs of useful instruments and splendid mathematical precision.
Only four miles to the northwest of Locust Grove in Adams County, Ohio, at the junction of highways 11 and 73, is famous Great Serpent Mound, well worth a day's outing for any motorist. The giant serpent is a thousand feet long, five feet high and thirty feet wide at its base, with the tail formed in a triple coil, while between huge open jaws lies an egg shaped structure 79 by 109 feet. Don't delay a visit to Serpent Mound.
All along the route to Serpent Mound you will find Loreco Service indicated by the friendly red and white emblem that has become familiar to car owners in this vicinity as the sign of superior gasoline and motor oil.
If you prefer to use Veedol Motor Oil because of its accessibility every where you go, you'll find it distributed through most Loreco Service Stations for your accommodation.
VEEDOL
LOUISIANA OIL REFINING CORPORATION
PRODUCERS · REFINERS · MARKETERS
1928 Loreco Highway Guides Now Available at all Loreco Stations
LORECO
GASOLINE = MOTOR OIL

One of Louisiana Oil Refining Corp.'s Ohio series of advertising based on historical incidents and places

22 Oil Clubs Organized In Illinois

CHICAGO, June 9.—G. A. Primm, secretary of the Illinois Petroleum Marketers association, has set out upon a program to organize 22 petroleum clubs within the state—one for every senatorial district. Six have been organized and meetings have been called which, it is expected will result in the formation of four more in the week ending June 16.

Probably the largest single group will be in Chicago. It is numbered Group 1 and divided into two divisions. Group 1-a will be composed of oil men in the densely populated suburban district surrounding Chicago. Each group has its own president and secretary and the plan is to hold meetings monthly, but each is to be subordinate to the state organization.

Mr. Primm says the work of organization and of meeting with the oil men as often as possible at their monthly meetings has pyramided the secretary's duties until it is more than one man's job. He states that the directors have authorized him to engage a field secretary as his assistant.

New Method for Appraising Results Of Production Control of Wells

By Hallan N. Marsh*

A NEW method of estimating the future production of oil wells is given in the accompanying paper, the greatest benefit in the use of which, it is set forth, is the ability to show changes in the expected ultimate recovery which would not show up in the forms of decline curves now used.

The method, which is described in detail and illustrated, is through the use of what are called rate-cumulative production charts.

Changes in operation of wells effect such large changes in ultimate recovery, the author states, that experimental changes should be made from time to time and the results on ultimate recovery noted. The method described is offered as means of noting such results.

SOME of the factors that limit the ultimate recovery of oil sands are beyond the control of the operator, but other factors are to some extent subject to control.

That the ultimate recovery from a well or group of wells is partially dependent upon the way in which the property is operated has been recognized; but just how wells should be operated to secure the greatest recovery is still largely a matter of opinion rather than of definite scientific knowledge.

This paper is the result of statistical research into a few of the almost infinite number of oil production problems that need investigation.

It sets forth a convenient method of estimating the effect of changes in operation upon ultimate recovery, and shows the results of such changes in certain specific cases.

It is found that, in most of the cases investigated, an increase of operating back pressure, with consequent reduction in daily rate of production, has given indication of resulting in large increases in ultimate oil recovery.

Such effects as the indicated reduction in ultimate oil recovery from an old well due to drainage from a new well nearby, are shown, as is the relation between gas-oil and ultimate relation between gas-oil ratio and ultimate recovery for certain wells.

THE factors affecting the ultimate recovery of any well may be broadly grouped as those over which the operator has no control, and those which are at least partially, and in some cases, subject to control.

Chief among the first class are the character of the geologic structure, the thickness, extent, porosity, grain size, and partitioning or lenticularity of the sands, and the contents of the structure as regards amount, physical characteristics, and distribution of oil, gas, and water. These factors will not be discussed.

Chief among the group of factors subject to control are the manner in which the well is drilled, cased and tubed for production, the way the well is operated, and the proximity and operation of other wells.

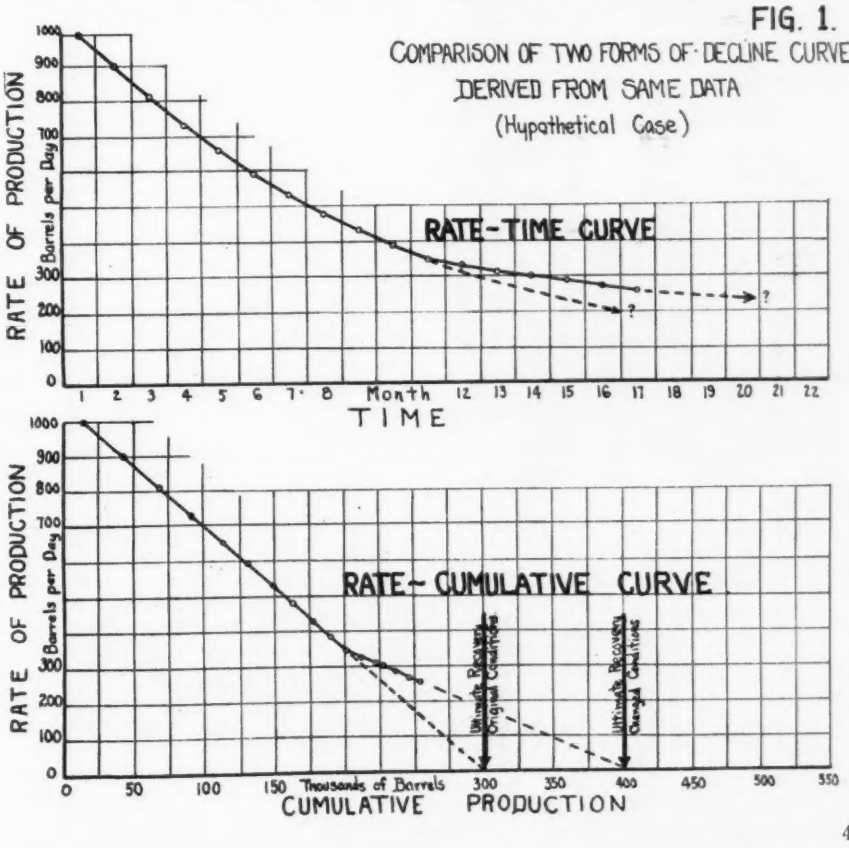
While the first of these three, the drilling and casing of the well, is of great importance, it will be omitted from this discussion as mechanical methods of completing walls are fairly well understood and no new information is made available in this paper.

The discussion is therefore limited to the effect upon ultimate recovery of the manner of control of wells, and the proximity and operation of nearby wells.

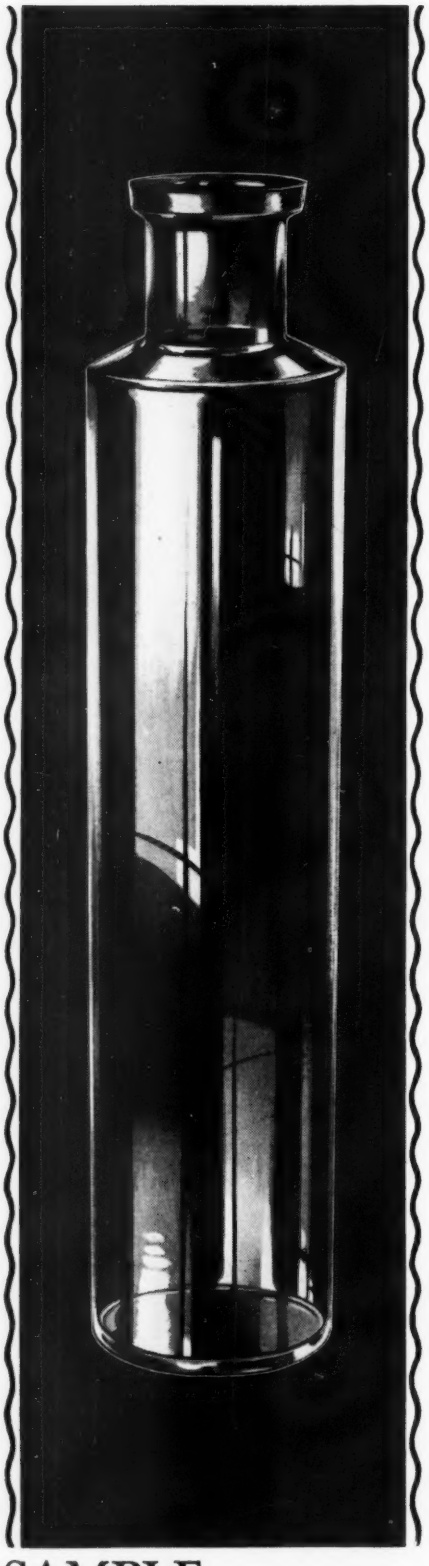
In the ultimate analysis, the method of operating a producing oil well can only affect the rate of recovery or ultimate recovery of that well by changing the mean effective back pressure against the producing strata, the space distribution of that back pressure, or the time distribution of that back pressure. Oil and gas have no foresight, so to speak, and the rate and ratio in which they enter a well can not be affected by the manner in which they are to be lifted out of the well any more than by the manner in which the oil is later to be refined, except as the method of production affects the effective back pressure. However, different methods of production may result in different back pressures, and different distributions of back pressure, and thus indirectly affect recovery.

IT IS unfortunate that there is not yet available any practical methods for measuring the pressure at the bottom of an oil well while the well is producing. In the absence of such a device, it is generally necessary to talk about the back pressure in terms of things that affect it and can be observed or measured, such as flow

FIG. 1.
COMPARISON OF TWO FORMS OF DECLINE CURVES DERIVED FROM SAME DATA
(Hypothetical Case)



*General Petroleum Corp. of California.



SAMPLE
OIL BOTTLES

famous for sturdy, clear glass free from distortion.
2-4-8 oz. sizes. Sample on request

Illinois Glass Co.
Alton Ill.
ESTABLISHED 1873

bean size, tubing depth, tubing pressure, casing pressure, and production rate.

In the case of a well flowing through tubing, the pressure at the bottom of the tubing is substantially equal to the casinghead pressure. However, tubing is not always run to the bottom of a flowing well, so casing pressure is not a measure of the pressure at bottom. Where the producing zone is of considerable thickness, not only the pressure at some one level, but at a whole series of levels should be known.

Therefore, casing pressure is not an entirely satisfactory indication of back pressure against the oil measures. It is important, however, to remember that recovery is controlled solely by amount and distribution of back pressure. An installation or device that is claimed to increase recovery should be judged by whether it is capable of giving a more suitable pressure or distribution of pressure than can the installation with which it is competing.

A reasonable method for computing the back pressure at various levels in a flowing or gas lift well was outlined by F. W. Lake at the Fort Worth meeting of the American Institute of Mining and Metallurgical Engineers in October, 1927. His analysis is of value in understanding qualitatively the effect of various installations, but unfortunately all the factors necessary for evaluating his equations are not known.

Both theory and observation indicate that rate of production is some inverse function of back pressure—that is, decreasing back pressure tends to increase production. The corollary of this is that an increased production indicates decreased back pressure. Thus, in cases where back pressure can not be measured, changes of pressure may be inferred from changes of production rate.

It is of course believed that drilling new wells is apt to reduce the recovery of old wells in the same zone, and there has been unlimited theoretical discussion of this subject, but little statistical evidence is available as to just how much the recovery of an old well is curtailed by new wells at various distances and completed at various dates. The wisdom of drilling late wells is therefore largely a matter of guesswork. It is believed that the method herein described will throw some light on this problem.

AUTHOR H. N. MARSH acknowledges the help in the preparation of his paper given by executives of the General Petroleum Corp. of California, by S. J. Dickey, of the same company, who first proposed the use of rate-cumulative curves and by B. H. Robinson, who assisted in developing the methods and conclusions presented.

Estimation of Ultimate Recovery

IN ATTEMPTING to estimate the future production of a well, the life of the well should be divided into three periods.

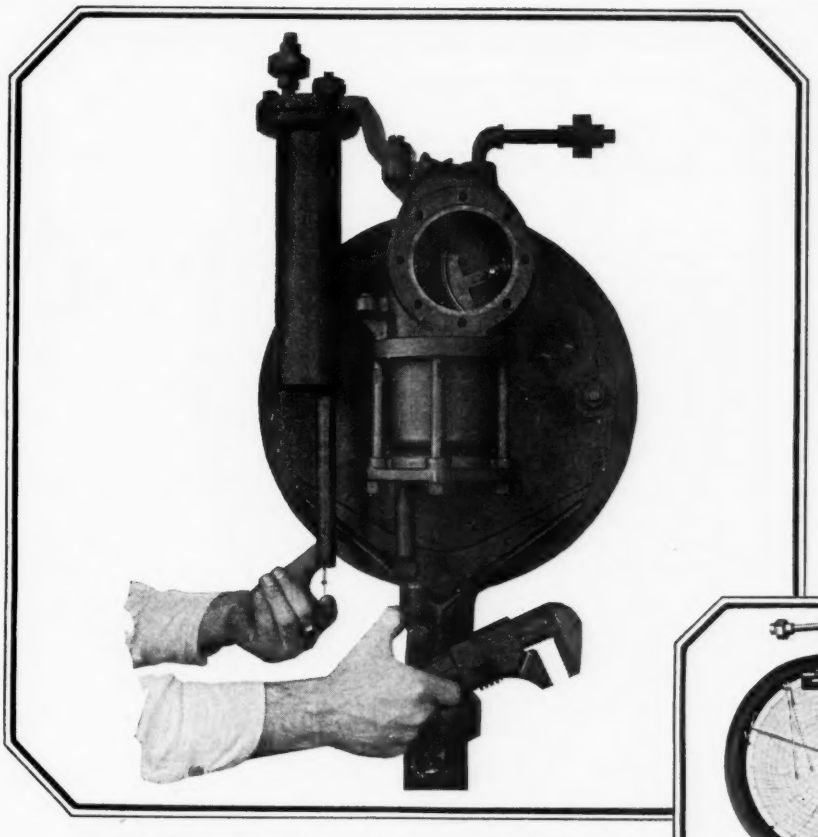
First of these is the flowing period, during which the rate of decline is a true measure of the decline of potential production rate, so long as no changes are made such as tubing size or depth, bean size, etc. Estimates of ultimate recovery may be based upon production data during this period. With the flowing period may perhaps be included the time the well is produced by gas lift, provided the installation remains unchanged, and the amount of gas circulated is constant. Sufficient data have not yet been analyzed to determine whether this is always allowable or not.

The second period is the early pumping life of a well, when the potential production rate is in excess of the capacity of the pump. During this period the rate of production is a measure of the capacity of the pumping equipment rather than of the capacity of the well. Estimates of the future production of a well based on this period are inaccurate. It should be noted that the displacement of a pump may be several times the production and its capacity be just equal to the actual production and much less than the potential production, because of low volumetric efficiency.

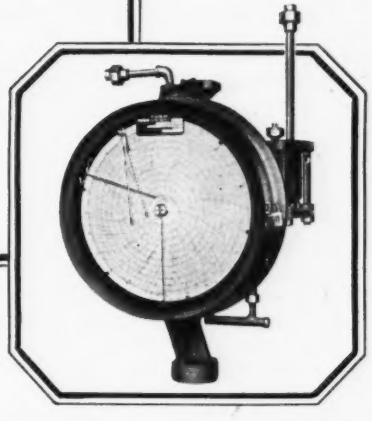
The third period is the later pumping life of a well, when the capacity of the pump is in excess of the potential production so that the actual production is the potential producton. During this period estimates of future production are probably most accurate. However, estimates at this stage are of relative unimportance because the remaining production is generally only a small fraction of the total production.

So many different methods have been proposed for estimating the future production of oil wells that it may seem superfluous to bring forward another. Some of the past methods are unsatisfactory because they do not give a satisfactory degree of accuracy, or because they require production data over too long a period without changes in methods of handling wells, to make their application practicable. Many are too cumbersome or involve too much mathematics to be used extensively. Others, although mathematically correct, are liable to lead to erroneous conclusions. None of them is entirely satisfactory for all purposes.

EASY... *to clean*



The many revolutionary advantages of the new Foxboro Orifice Meter has led to its adoption by oil and gas companies everywhere. It has no inherent error. It has a uniform scale chart. Office corrections for variables are reduced to a minimum. The records by which you buy or sell gas will be accurate, not approximate. It is the most powerful float type meter on the market. All parts are practically indestructible. Calibration is permanent.



The illustration shows the removal of "U" bend and rust proof check floats.

THE man in the field will be quick to appreciate how simple a job it is to clean the new Foxboro Orifice Meters. After cleaning and assembling the meter is zeroed by a simple micrometer adjustment. ***Get in touch with our nearest branch office.***

Foxboro Guarantee sealed to each recording and controlling instrument.

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Neponset Avenue, Foxboro, Mass., U. S. A.
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NEW YORK CHICAGO BOSTON PHILADELPHIA PITTSBURGH CLEVELAND ROCHESTER, N. Y. ATLANTA LOS ANGELES SAN FRANCISCO PORTLAND, ORE. DETROIT

PEACOCK BROTHERS, *Limited*, 1605 Delorimier Avenue, Montreal, Canada
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THE COMPASS OF INDUSTRY

Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

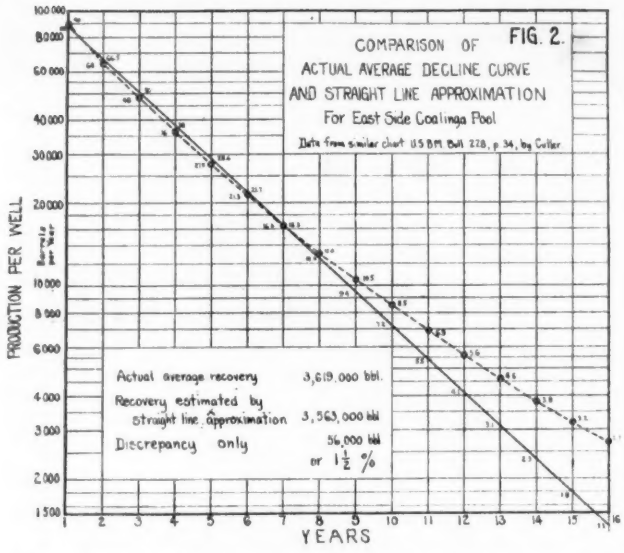
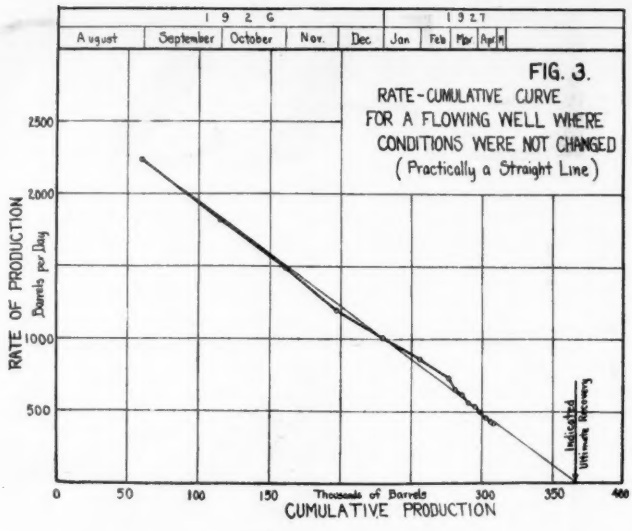


FIG. 2.
COMPARISON OF ACTUAL AVERAGE DECLINE CURVE AND STRAIGHT LINE APPROXIMATION
For East Side Coalinga Pool
Data from similar chart U.S.B.M. Bull. 278, p. 34, by Coller
PRODUCTION PER WELL
Barrels per Year
YEARS
Actual average recovery 3,619,000 bbl.
Recovery estimated by straight line approximation 3,563,000 bbl
Discrepancy only 56,000 bbl
or 1½ %



The method about to be described seems superior to any others that have been used in the past, at least for some purposes and as applied to some fields. It is not claimed to be more accurate, but it is believed to be as accurate as the data justify in most cases, it is easy to apply, and the conclusions are apparent as soon as the data are plotted. No computations more difficult than addition and averaging are required.

Most methods have assumed that the ultimate recovery of a well is not under the control of the operator, or at least that the operator does not exercise such control. The method described in this report shows quite clearly that the ultimate recovery of a well is greatly affected by the manner in which it is operated, and that every little change in operating method that causes a change in back pressure is reflected in the indicated ultimate production. This new method of estimating ultimate production provides a convenient means of determining what method of control will lead to the greatest ultimate recovery.

The Rate-Cumulative Production Curve

IT HAS been found that, when the rate of production of a well is plotted against the cumulative production of that well, the decline curve so established is generally almost a straight line so long as conditions remain unchanged. Plotting such a curve for a period of a few weeks establishes the slope of the line which may then be extrapolated until it intersects the cumulative production axis.

The production rate will then be zero, or in other words the well will have reached its total ultimate production which will be the cumulative production to that point. This forms a convenient and apparently fairly reliable method of estimating the ultimate production to be expected from a well, assuming that conditions remain unchanged. Such curves will be called "rate-cumulative production curves," the name describing the curve by abscissa and ordinate.

If conditions are changed, either in the operation of the well concerned or of a neighboring well, or if a new well is brought in nearby in the same horizon, then the slope of such a decline curve is apt to change. This indicates that the change of conditions has altered the expected ultimate recovery, and this change of expected recovery can be quickly estimated as the difference on the cumulative production axis between the points where projections of the new and old rate-cumulative production curves intersect it when extrapolated.

This form of decline curve is believed to be better than the customary curve of production rate plotted against time, for the purpose of estimating ultimate recovery and of observing the effects of changes in operating methods, because the ultimate recovery under any set of conditions is an intercept value which may be read directly, and also because changes are apparent at a glance.

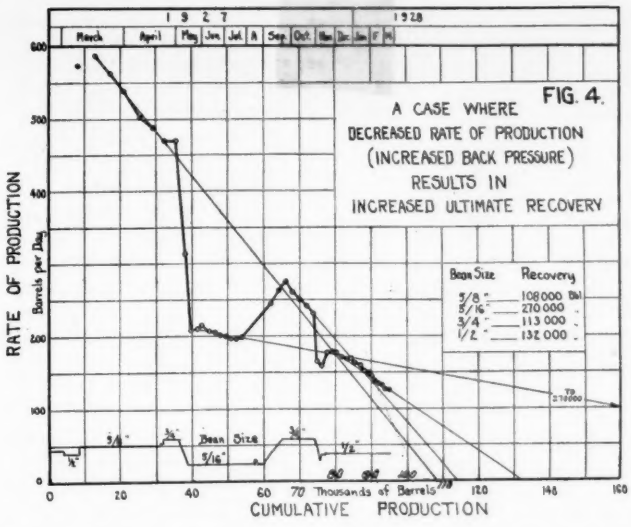
Ultimate recovery could only be estimated from the familiar rate-time decline curves by first extrapolating a curved line, which can only be done accurately by some mathematical method, and then integrating the area under the curve by an instrumental or mathematical method. Changes of rate of decline are not so apparent on the old type of curve as on the new because a change of slope is not so apparent on a curved line as on an otherwise straight line.

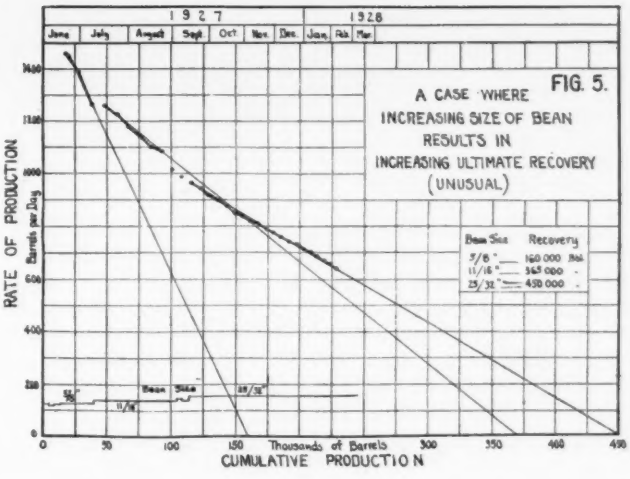
Also rate-time curves are nearly vertical in the early life of the well, and nearly horizontal in the late life of the well, so that during these periods a large change of rate of decline causes only a small change of direction of the curve. On the contrary, rate-cumulative curves if properly drawn have a slope somewhere near forty-five degrees, at which angle any percentage change in rate of decline makes the greatest change of direction of the curve. On the average well in the latter stage of its history any change in rate quickly shows up; for example, old wells in Coalinga. The production is so steady it is almost impossible to guess the future production.

Figure I illustrates the differences between the old and new forms of decline curves, for an imaginary well. The first curve is the customary decline curve of production rate as a function of time or date. The second straight line decline curve is derived from the same data, daily rate of production being plotted against cumulative production. Such a curve is easily constructed by totaling the daily productions on an adding machine, taking off sub-totals once a week or at any other convenient interval, and plotting the rate of production against the corresponding sub-total.

For purposes of illustration, it was assumed that, in November some change was made in the operation of the well that reduced the rate of decline to half the previous rate. The upper branch on each of the charts shows this changed condition. The two differences previously described are apparent. Looking only at the first chart it would be difficult to tell even which branch of the curve was the smooth continuation and which represented a change of conditions. It is probable in fact that the change of decline rate would pass entirely unnoticed even though it were a fifty per cent change.

With a curve showing the performance of an actual well it would be still more difficult to detect a general change, because there would be many minor and temporary changes resulting in irregularities of the curve that would obscure the big change, and even a careful operator might change back to the original conditions without realizing that he was making a mistake. Estimating





the difference between the ultimate recovery resulting from the two sets of conditions would be a task for a mathematician.

Looking now at the lower chart based on cumulative productions, the same change is so striking it could not possibly be overlooked. The improvement is so marked that one would not be apt to change back to the original condition. Moreover, the ultimate recovery to be expected under either of the conditions of operation can be quickly estimated by merely continuing the curves as shown dotted. The expected ultimate recovery is the value of cumulative production where the dotted line hits the zero production rate line.

It is not expected that this method is infallible or absolutely accurate, but it is held to be as reliable and correct as the data justify; at the same time much more convenient; and to give results much more apparent than customary methods. Certainly rate of decline is a measure of efficiency that needs to be studied and made apparent.

It can be demonstrated mathematically that a rate-cumulative curve which is a straight line is equivalent to a constant percentage decline curve, which is a straight line on semi-logarithmic paper. The assumption that oil well production curves in which the rate of production is plotted against time on semi-log paper are straight lines has been seriously criticized. By inference, the same condemnation applies to rate-cumulative curves if assumed as straight lines.

This criticism may be correct from a mathematical point but at the same time may be more theoretical than actual. Cutler[1] in Bureau of Mines Bulletin 228, entitled "Estimation of Underground Oil Reserves by Oil Well Production Curves," shows curves that are copied in Figure 2. The original is captioned: "Chart to illustrate inapplicability of semi-logarithmic paper to production decline curves." Reading from the chart as carefully as possible the values of annual production by years and totaling them gives the following results:

Average recovery .....3,619,000 barrels
Recovery estimated by straight.....
line .....3,563,000 barrels
Discrepancy .....Only 1½%

Anyone even casually acquainted with oil wells knows that all estimates of future performance are only approximate, so that differences of a few per cent are entirely negligible. Of two methods that agree as closely as this, the most convenient one should be used.

THE example of Cutler's illustrates the erroneous conclusions that are apt to be drawn from theoretically good methods. A casual inspection of this chart would lead anyone to the conclusion that the straight line approximation of the true curve is seriously in error. The explanation is that the part of the chart where there is a wide divergence between the two lines is on a large scale, while the part of the chart where the two lines nearly coincide is on a small scale. Semi-logarithmic and logarithmic paper are useful tools for the experienced engineer; but they are not so well suited for a graphic portrayal of facts which is to be studied by a layman, as curves plotted to normal scales.

In order to illustrate how accurately the ultimate recovery of wells can be predicted from their early performance, a few actual examples will be given. Cutler,[2] on pages 64 to 68 of Bureau of Mines Bulletin 228 gives coordinates which he says establish the complete decline curve for wells in many fields. He says of them: "These average curves were made in 1921 by the mathematical method from the latest production records available from many thousands of individual wells and properties."

Rate-time curves have been plotted from these data for a few cases, and transferred to a rate-cumulative basis. The actual recovery for ten years has been totaled, and compared with the recovery estimated from straight line extrapolation of the first year's rate-cumulative curve. Results are as follows:

Brea Canyon.....3% Discrepancy
Buena Vista.....6% Discrepancy
Whittier.....5% Discrepancy

Certainly greater accuracy than this can not be expected in estimating the future production of wells and in fact it is doubtful if either method is within any such accuracy of the actual ultimate production.

Rate-Cumulative Curves of Actual Wells

FIGURE 3 is the rate-cumulative production curve for a flowing well in the Ventura Avenue field. This is submitted as evidence that such a curve may be practically a straight line so long as conditions of handling the well remain unchanged.

Assuming the rate-cumulative curve to be a straight line, it can be shown that the recovery to any date is to the ultimate recovery to be expected as the decline to the same date is to the initial production rate. Thus while this chart covers less than a year's time, it represents over 80 per cent of the life of the well in terms of recovery, as the rate of production has declined by over 80 per cent of the initial production.

The increase of indicated ultimate recovery affected by increasing back pressure is very marked in some cases as illustrated in Figure 4. Soon after being brought in, this well was flowed through a ⅝-inch bean for several weeks. During this period the indicated ultimate recovery was only 108,000 barrels. The well was then pinched back with a ½-inch bean, and the decline rate decreased to such an extent that the indicated

1 Cutler, Willard, W. Jr., Estimates of Underground Oil Reserves by Oil Well Production Curves; Bulletin 228, Bureau of Mines.

2 Op. cit.

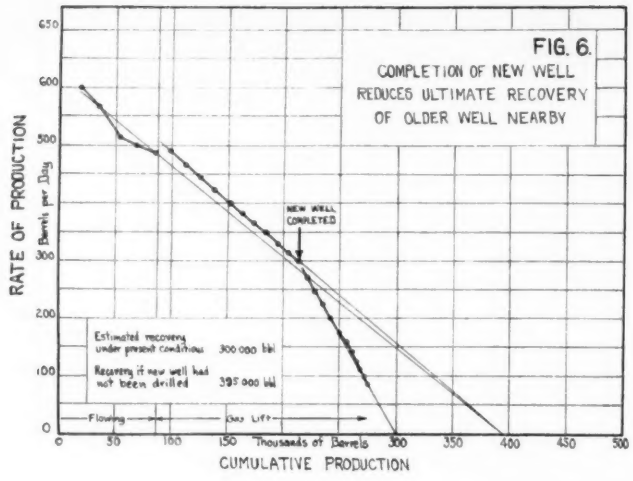
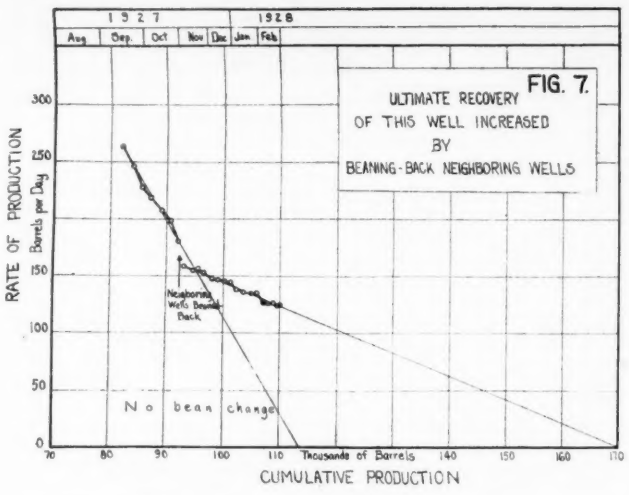


FIG. 6.
COMPLETION OF NEW WELL REDUCES ULTIMATE RECOVERY OF OLDER WELL NEARBY
RATE OF PRODUCTION
Barrels per Day
NEW WELL COMPLETED
Estimated recovery under present conditions 300 000 bbl
Recovery if new well had not been drilled 395 000 bbl
Flowing
Thousands of Barrels
CUMULATIVE PRODUCTION



ultimate recovery became 270,000 barrels, about two and a half times as much as before. Opening up to ¾-inch bean affected the well in such manner as to decrease the indicated recovery to 113,000 barrels, whereas pinching it again to ½-inch increased the indicated ultimate production to 132,000 barrels. In this case the smallest bean gave the highest indicated recovery. Many cases of this kind can be cited, and this one seems typical.

A few exceptions to this rule have been found, of which Figure 5 presents a typical case. This well after cleaning up was flowed through a ⅝-inch bean. The decline was very rapid, indicating an ultimate recovery of 160,000 barrels. When the bean size was increased to ¼-inch, the indicated recovery was increased to 365,000 barrels. Further opening up, to a bean size of 25/32-inch further increased the indicated ultimate recovery to about 450,000 barrels. In this case the largest bean gave the largest indicated recovery. A few other cases of this type might be cited but they are decidedly in the minority among those studied to date.

In a paper entitled: "Methods of Effecting Gas Conservation and Increased Recovery Efficiency in Ventura Field, California," T. E. Swigart,[1] gives several examples of the effect of back pressure on gas-oil ratio and ultimate recovery from wells in Ventura Field, California, with more complete discussion of the relations found in wells in that field.

The effect of the completion of a new well upon the recovery of a previous well is clearly shown by Figure 6. This well had an indicated recovery of 395,000 barrels, but completion of a new well nearby reduced it to 300,000 barrels, even though it occurred in the middle life of the older well. It is of interest to note the straightness of this curve both before and after the completion of the new well, and the sharpness of the break.

It should be noted that there was no sharp break in the daily production rate when the new well was completed—only a change in rate of decline. For this reason, curves of this sort are necessary to make such important effects apparent. Many similar cases have been observed.

Killing or pinching—back wells frequently results in increasing the production of a neighboring well, as is illustrated in Figure 7. This well had an indicated ultimate recovery of 113,000 barrels. The first of November some nearby wells were beaned back to conserve gas, and as a result, the indicated ultimate recovery of this well was increased to 170,000 barrels. A few other cases of this kind are known, particularly in Ventura Field, California.

Relation Between Rate of Decline and Gas-Oil Ratio

RECENTLY, gas-oil ratio has received much attention, and is generally conceded to be an important measure of production efficiency. It would perhaps be expected that there would be some fixed relation between the gas-oil ratio of a well and its rate of decline. Figure 8 illustrates an unsuccessful attempt to establish such a general relation. On it are plotted the monthly percentage declines of a number of wells against the corresponding gas-oil ratios. Data are all from one small group of wells within a period of a year. The most obvious conclusion is that the points not only do not fall along any line, but do not even fall in a band, or

1 Swigart, T. E., paper presented before the Colorado Springs meeting of the Division of Development and Production Engineering of The American Petroleum Institute, June 15, 1928.

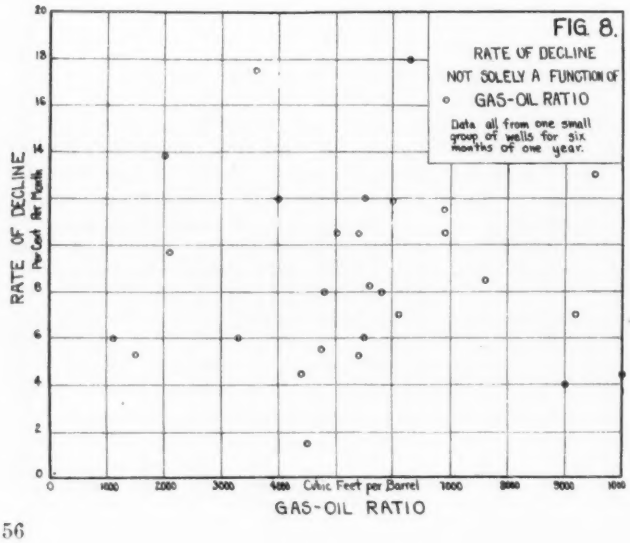
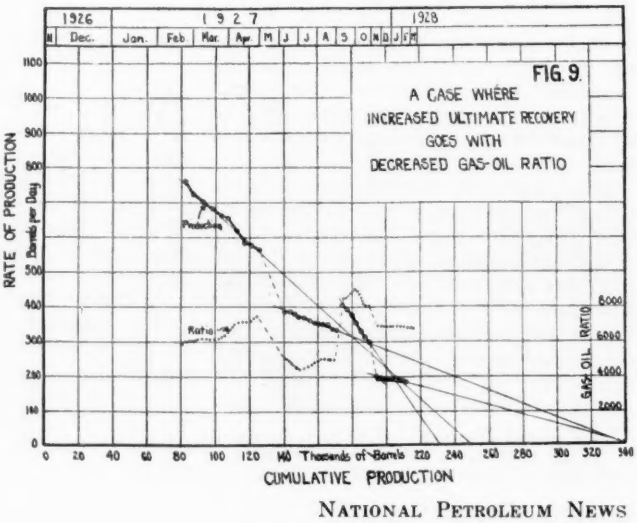


FIG. 8.
RATE OF DECLINE NOT SOLELY A FUNCTION OF GAS-OIL RATIO
Data all from one small group of wells for six months of one year.
RATE OF DECLINE
Per Cent per Month
Cubic Feet per Barrel
GAS-OIL RATIO



any regular pattern. It has been found further that the points for certain wells on different months do not always show any consistent tendency, and also that the points for different wells on any one month do not establish any logical relation.

It must be concluded, therefore, that other variables are so numerous as to completely mask the effect of gas-oil ratio when investigated in this statistical manner. A well's rate of decline is dependent not only upon its gas-oil ratio, but also upon many other factors, previously outlined. While gas-oil ratio is only one of the many factors affecting recovery, it merits the attention it is receiving because it is one of the few factors over which the operator has any control.

That gas-oil ratio is at least one important factor affecting rate of decline can hardly be doubted after studying Figure 9. During the first period shown, the rate of decline was rapid, giving an indicated ultimate recovery of 250,000 barrels, and the gas-oil ratio was high and climbing. A pinch-back reduced the gas-oil ratio about 30 per cent and increased the indicated recovery to 340,000 barrels.

Later, when the well was opened up again, the gas-oil ratio increased 40 per cent, and the indicated recovery was reduced to 230,000 barrels. Another pinch-back again reduced the ratio and increased the recovery. In this field, flowing wells when undisturbed have a steadily rising ratio. It is important to bear this in mind while looking at Figure 9. Thus through four distinct periods, with three intervening changes, the relation was consistent—increased ratio apparently caused reduction of ultimate recovery, and vice versa.

It would be unfair to omit saying that while numerous cases similar to that of Figure 9 might be cited, there are also some where this expected relation between ratio and rate of decline, is not apparent, or even contradictory. Swigart,[1] has given a rather complete discussion of this subject in his paper.

The most important thing that can be concluded from this research is that changes in the operation of wells affect such large changes in ultimate recovery that experimental changes should be made from time to time and the results carefully analyzed, so that the conditions leading to the greatest economic ultimate recovery can be known and maintained. Conditions that are best for one well are not necessarily best for a neighboring well, although experience may make possible intelligent guesses as to what will be best. Conditions that are best at one period in the life of a well may not be best later.

Rate-cumulative production charts form a convenient means of making the results of changes apparent.

The wisdom of drilling new wells in old leases should be considered in the light of the amount of production they are apt to rob from old wells. Analyzing with rate-cumulative curves the effect of new wells on old wells gives definite information upon which to base such estimates.

The relation between gas-oil and ultimate recovery is not as simple as some have supposed, but the belief that gas-oil ratio should be kept as low as possible is not refuted or disputed.

1 Op. cit.

What Standardization Means to Oil Industry

CONCRETE instances of the accomplishments of the American Petroleum Institute program of standardization of oil field equipment were presented by J. Edgar Pew, vice-president Sun Oil Co., and chairman of the institute's standardization committee before the National Association of Purchasing Agents recently in Kansas City.

A few of these are given below, as taken from his address.

They will serve to give the man in the industry who has not followed the details of this phase of the institute's work the past few years some idea as to the benefits of the standardization program to the industry at large.

"Number of sizes and styles of equipment previously used have been reduced; for example, on cable drilling tool joints the number has been reduced from 306 to 11; on rotary drilling taper joints from over 100 to seven; on rigs and derricks over 200 different heights and sizes were in use, which has been reduced to 11; on sucker rods there were possibly 30 to 40 types in use, which have been reduced to three. The same applies to tubing threads."

* * *

"Our specification on rigs and derricks not only provides uniform base sizes, openings in the water tables, standard heights, etc., but also contains formulae for computing the strength or capacity of derricks. These specifications when followed insure that the A.P.I. derrick will stand a specific wind load of not less than 70 miles per hour."

"I wonder if it has occurred to any of you (the purchasing agents) that the institute has developed standards on practically every important threaded connection used in the drilling, producing and transportation of petroleum.

* * *

"Over a total of 200 manufacturers have been licensed to use the A.P.I. monogram on the various products made in accordance with A.P.I. specifications as follows: boilers 12; cable drilling tool joints 51; rigs and derricks 7; oil country tubular goods 35; rig irons 13; chain 10; line shafts 4; rotary drilling taper joints 38; working barrels 6; sucker rods 11; internal combustion engines 2; line pipe 12."

One more recruit from the oil industry who's out to prove that commercial aviation pays. This time it is Sidney H. Keoughan, president of the Continental Oil Co., Denver, Colo. He is standing at the left. A Ryan monoplane, sister ship of Col. "Lindy's" new plane, is Mr. Keoughan's choice.

Cooperative Pumping of Deep Wells In the Cromwell Pool

By John Power
N. P. N. STAFF WRITER

TULSA, June 9

COOPERATION can be applied as effectively to reducing the lifting costs of settled production as to the development of the more spectacular flush areas. This is demonstrated by steps being taken by a group of producers with settled pumping wells in the Cromwell field of northeastern Seminole county, Okla.

By a careful and scientific study of the pumping problems these companies are releasing for duty elsewhere more than 30 gas engines, reducing labor, overhead and generally increasing the efficiency of operation of their properties.

The powers, one located in Sec. 5 and the other in Sec. 8, Twp. 10N-8E, are practically identical in construction. Each is so located with reference to the wells that it is to handle that little trouble is expected in balancing the load.

Few, if any, dummy wells will be needed, so that by far the greatest portion of the load on the powers will pay its own way. Friction of the rod lines on the doll heads has been greatly reduced by setting the tops of the rod carriers in a catenary curve, thus allowing for the natural sag of the rod lines and permitting the rods to clear the bottoms of the doll heads when on the up stroke.

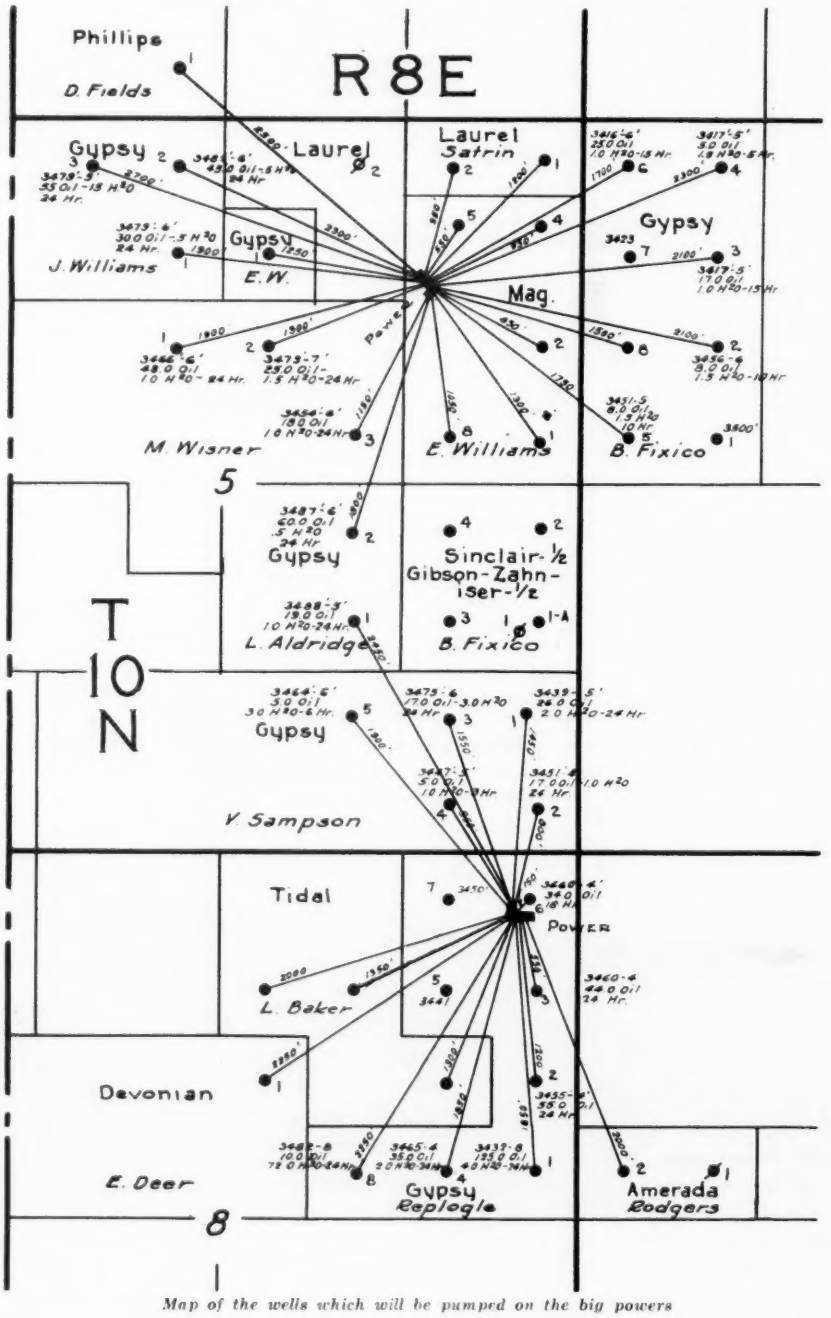
Instead of the tops of the rod line carriers being set on a straight line between the D-link plate at the pumping jack, and the hook-off post, at the power, they are set so that they form an inverted arch, which follows the natural sag of the rod line when it is suspended between these two points. Allowances must be made, of course, for swings, over or under-passes and the like. Care must also be taken not to get the doll-heads low enough for the rod to clear them when it is pulled tight on the up-stroke. Such design must be worked out mathematically and not guessed at.

The plants are being built by the Gypsy Oil Co. Other companies whose wells will be pumped include the Tidal Oil Co., Devonian Oil Co., Amerada Petroleum Corp., Laurel Oil & Gas Co., and the Phillips Petroleum Co. These companies will lay their own rod lines, set their own jacks, and will pay the Gypsy a certain amount per well per month for pumping.

In addition to the size of the powers, (they are being built to handle 24 wells, 3400 feet deep) there are several engineering features of unusual interest in their construction, such as automatic idlers, two engines apiece, and the use of endless belts.

The automatic idler, a smaller model of which has been in service on a Gypsy lease in the Davenport district for the past year or so, was developed and designed by H. A. Hodgson, H. F. Brindel and Hollis P. Porter of the Gypsy engineering department, and Paul E. Mahaffey of the Happy Belting Co.

According to belting experts, the life of a belt is practically determined



Map of the wells which will be pumped on the big powers

A plain statement of facts

MORE than twenty years ago the first commercial oxygen for welding and cutting was produced—Linde Oxygen.

From that day on, Linde has been the standard with which all others are compared.

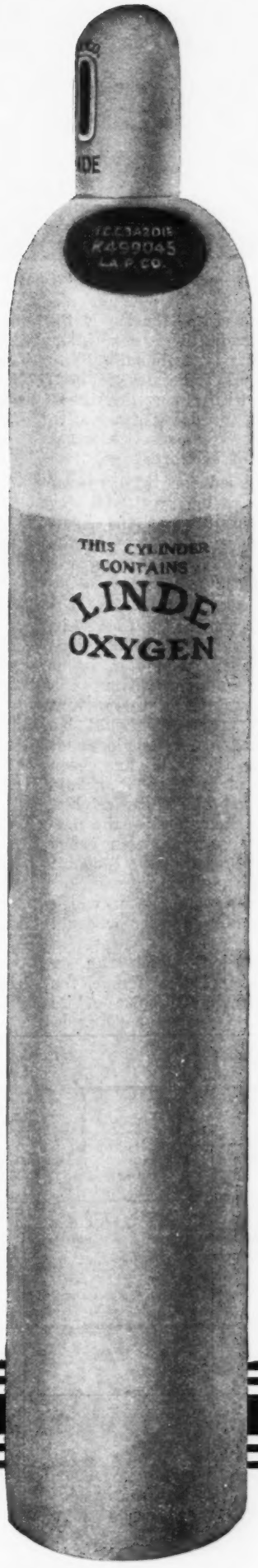
It has always had by far the largest sale of any oxygen.

There are three reasons for this:

—uniform high quality

—immediate delivery

—Linde Process Service—that insures the most economical results for Linde customers.



THE LINDE AIR PRODUCTS CO.
Unit of Union Carbide and Carbon Corporation
49 PLANTS UCC 102 WAREHOUSES
General Offices: Carbide and Carbon Building
30 East 42d Street, New York

LINDE OXYGEN

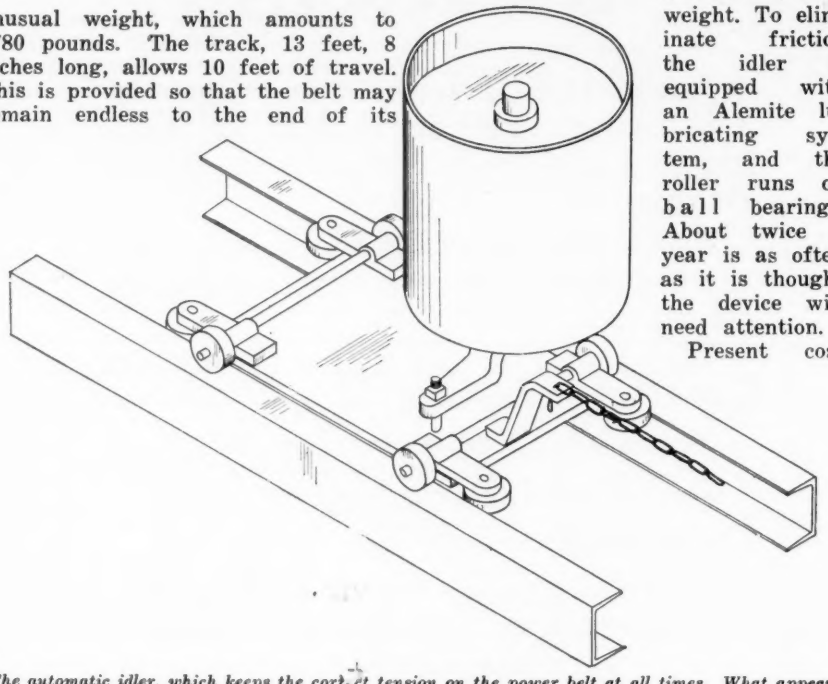
One of the powers the Gypsy Oil Co. is building in the Cromwell field of northeastern Okla.

by the regulation of the tension in relation to the load. The new idler, known as the Happy Automatic Band Wheel Power Belt Tightener, is used in conjunction with an endless belt. The endless belt, by doing away with the belt clamps, removes the most frequent source of belt breakage.

It is also claimed for this type of belt that, in saving a twist by running the back against the idler, a greater tractive surface on the power is used, thereby lessening the load on the engine.

When the peak load is on, the belt is tightest on the pulling side, away from the idler, and the side which runs against the idler is at its loosest. The pumper will usually run the idler up tight to prevent slippage, which is as it should be. But he will just as often leave it too tight when the load has been reduced, which is just as it should not be. By the use of counterweights, which function automatically, the new idler applies the same tension every time, tightening or loosening the belt as the load varies, allowing even for the load variations of stroke, which is something no human pumper could possibly do.

Mounted on rollers which run on a 6-inch ship channel steel frame, the idler functions easily in spite of its unusual weight, which amounts to 1780 pounds. The track, 13 feet, 8 inches long, allows 10 feet of travel. This is provided so that the belt may remain endless to the end of its days, no amount of stretch making it necessary to cut it.

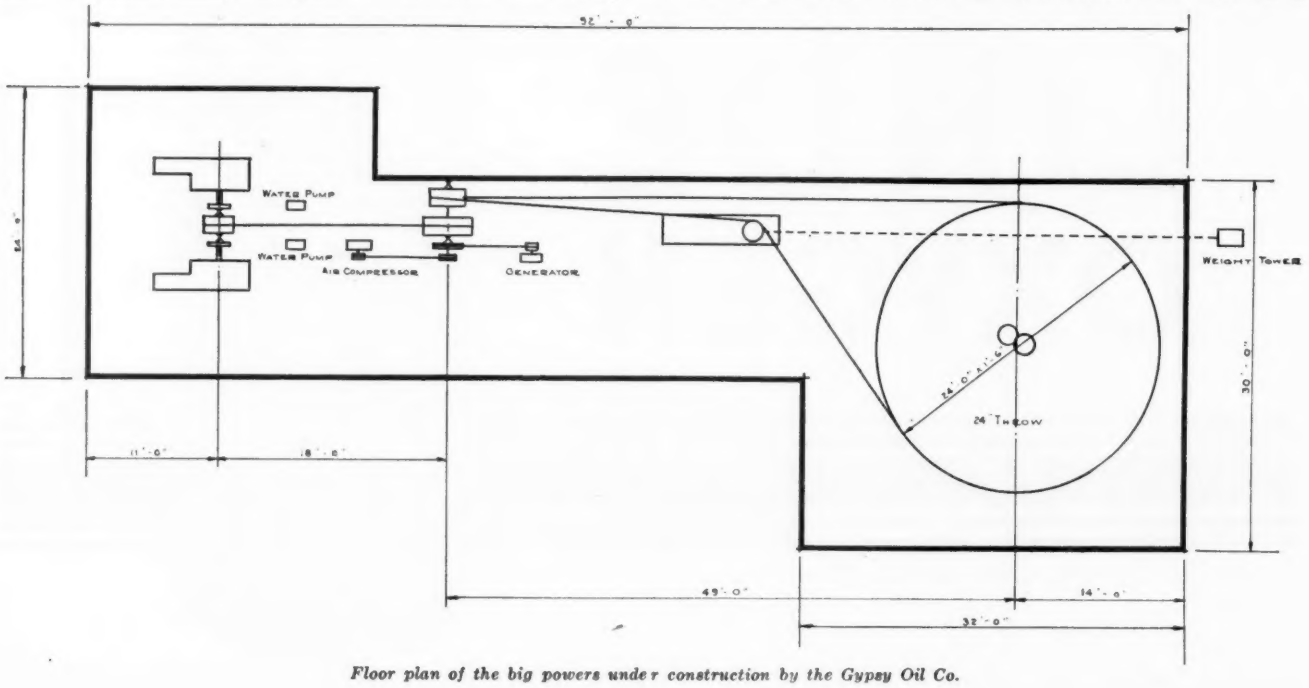


The automatic idler, which keeps the correct tension on the power belt at all times. What appears in the illustration as a log chain is really a ½-inch wire line. Weights on the other end cause it to function automatically

Proper tension is maintained on the belt by means of counterweights. A wire line clamp on the band wheel side of the carriage grips a line which passes under the band wheel out through the side of the building. A ten-foot tower is set up outside the power house, the line passing under a pulley at the base, up over and down two pulleys at the top.

The amount of weight required on the end of the line is a matter of experiment to a certain degree. The idler at Davenport, which is of the same design, though somewhat lighter in construction, is handling fourteen 3800-foot wells with 336 pounds counterweight. To eliminate friction the idler is equipped with an Alemite lubricating system, and the roller runs on ball bearings. About twice a year is as often as it is thought the device will need attention.

Present cost of the apparatus, about $450, will be reduced as it is manufactured in greater quantities. Its designers say that they have every reason to believe it will double the life of a



Floor plan of the big powers under construction by the Gypsy Oil Co.

When three big fields are given the benefit of strictly modern drilling and cementing methods—and all three become phenomenal producers—the inference must be obvious to anyone who gives the matter serious thought.

HALLIBURTON
OIL WELL CEMENTING COMPANY
DUNCAN, OKLAHOMA

No wonder they were "surprised at results!"

TWO officials of an oil company who recently saw one of their gasoline truck tanks cleaned with Oakite had reason to feel surprised. For the job was done better and in half the time previously required! And every trace of oil and dirt was removed from the tank, leaving its paint looking good as new.

The remarkable efficiency and economy of Oakite materials may surprise you, too. Let one of our Service Men call and explain more about Oakite advantages for *all* your cleaning. Write us—no obligation.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

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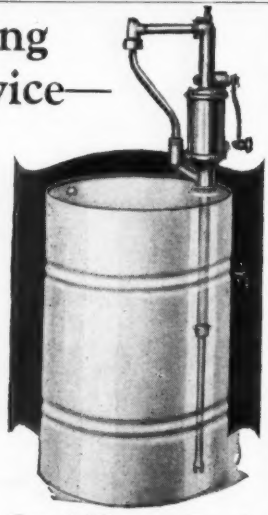
Industrial Cleaning Materials and Methods

Lasting Service— Low Cost

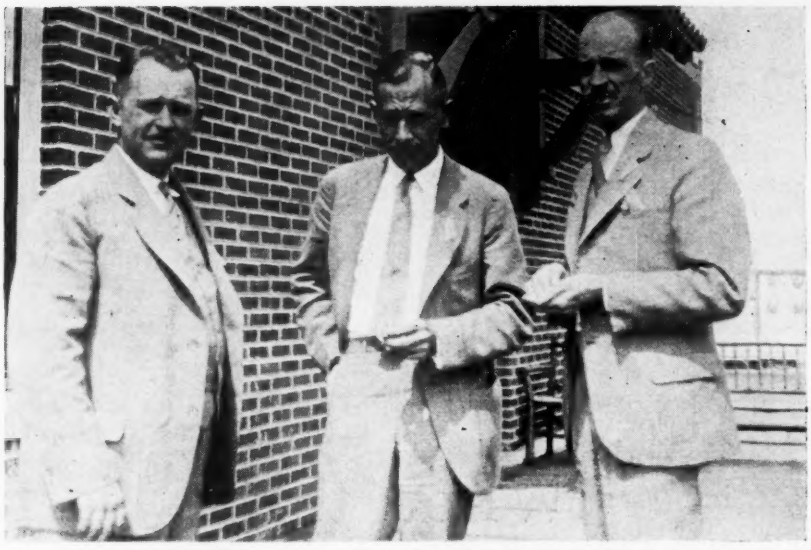


G & B Quart Measure Barrel Pumps answer the demand of dealers for oil dispensing units made to give long term service at a low cost.

G & B Quart Measure Barrel Pumps are sturdily constructed. They provide quick installation, easy operation and accurate measure. They afford the added attraction of inexpensive outlay and dependable performance.

Write for price and Bulletin T-12 giving complete information.

GILBERT AND BARKER MANUFACTURING COMPANY
SPRINGFIELD MASS. U.S.A.



J. H. Stewart of the Atlantic Oil Producing Co., Sydney S. Smith and Stanley Sellors of the Roxana Pet. Corp., snapped at the recent convention of the Natural Gasoline Association

belt, which costs $364 on a power of this size.

Variations of the idler are in service on short center drives of all kinds. It is said that, by their use on wells pumping on the beam, the vibration at the beam head is greatly reduced, resulting in considerably less trouble from broken sucker rods.

To handle the load two 35 h.p. 4-cycle, commercial type Superior gas engines are being installed. They are set up parallel to each other, and may be run separately or simultaneously as the load requires. A drive shaft is set between them, with bearings on each side of the drive pulley. Separate straightway clutches connect the engines with the drive shaft. The jackpost speed is reduced to 125 r.p.m., the power band wheel doing between 12 and 13 revolutions. Pulleys for the "airjammer" and generator are set on the outboard side of the jackpost.

A National band wheel power is being installed, with a diameter of 24 feet, and an 18-inch face. Two 24-inch eccentrics will be used.

The rod lines being installed are ⅞-inch, with upset drop-forged couplings. Number 5 Goble Variable jacks complete this part of the hook-up.

The plant is housed in a Stefco power house, 92 feet long, 24 feet wide at the engine end and 30 feet wide at the wheel end.

Total construction time on both powers, including about a week in the Gypsy's engineering office, where plans were worked out by Chief of Construction Hodgson and Assistant Brindel, will be about 75 days. It is estimated each power will cost $20,000, this sum being sufficient for the construction department to turn them over to production department under Mr. Porter, as complete, with the exception of the rod lines and pumping jacks.

"Sparco" Has Annual Picnic

SHREVEPORT, June 11.—The Shreveport Producing & Refining Co. held its second annual picnic for employes at Camp Lassa May 24. Attendance, including wives, children and sweethearts totaled 450. The children were supervised in their play by an experienced kindergarten teacher while the adults were amusing themselves with boxing bouts, races and a contest for the most handsome man. This latter contest resulted in a tie between John Johnson, foreman of the car repair shop, and John Satterly of the traffic department.

Committee chairman in charge of the picnic included Bradford Hearn, program; H. M. Cogswell, refreshments; C. O. Garbrecht, grounds; "Buck" Flatcher, women and children; and "Red" Chandler, transportation.

Makes New Gear Lubricant

JACKSON, Mich., June 9.—The American Oil Corp. has developed in its research laboratories a gear lubricant called GearO, built to an engineering standard. The method of the test was approved by automotive engineers of three different plants. It has withstood most severe service and laboratory tests.

LOS ANGELES, June 8.—Southwestern Engineering Co. has opened an office at Dallas, Texas, in the Magnolia building, in charge of W. F. Statham. This is a branch of the office at Tulsa, where R. B. Millard is in charge of sales in the Mid-Continent.

LOS ANGELES, June 7.—H. W. Hoots, formerly with the U. S. Geological survey, is now a member of the geological department of the Union Oil Co., with his headquarters at the main offices in Los Angeles.

Quality of Bowers Pool Crude Keeps Drills Going

Staff Special

AMARILLO, June 11

THE Bowers pool of Gray county, Texas, from a quality standpoint is the Pride of the Panhandle. Its oil, averaging nearly 44° A.P.I., receives the highest price for crude in the Panhandle, $1.26 a barrel.

The pool takes its name from the Bowers ranch, on which the discovery well was completed about a year ago. This well, the Majestic Oil Co. No. 1 Bowers, was completed in the granite at a depth of 3025-3030 feet for initial production of 590 barrels in the first 15 hours. A showing of oil was encountered between 2950 and 2970 feet, but, as it did not develop into commercial production, the well was carried on down.

The second well completed in the field, which was the Gulf Production Co. offset to the discovery, in the SE of Sec. 92, Block B-2, H. & G. N. survey, was the banner well of the field. Its initial production, 1767 barrels, was increased to 5000 barrels daily when it was deepened from 3005 to a total depth of 3020 feet.

During the year since its discovery, the number of producing wells has mounted to 38, with a total daily average production at this time for the field of about 9000 barrels.

Most of the operating companies having pipe line company affiliations run their own oil. The majority of smaller independents are served by the Sinclair Pipe Line Co. The oil, being of a superior quality, is in demand, so that new wells never go begging for connections.

The Granite wash, which is the pay formation, is no more noted for its reliability than for its consistency. Several dry holes have been drilled offsetting good producers, and the actual relative sub-sea level elevations at which the pay is found do not serve as infallible indications of production.

This is due to the fact that the granite is shot through with streaks of red shale, which serve as barriers to progress of the oil through the formation, and make for a marked unconformity in the size of the wells. The decline curve of production is also largely a matter of the individual well. Due to the same reason the production on some wells falls off much more rapidly than that of a neighboring location.

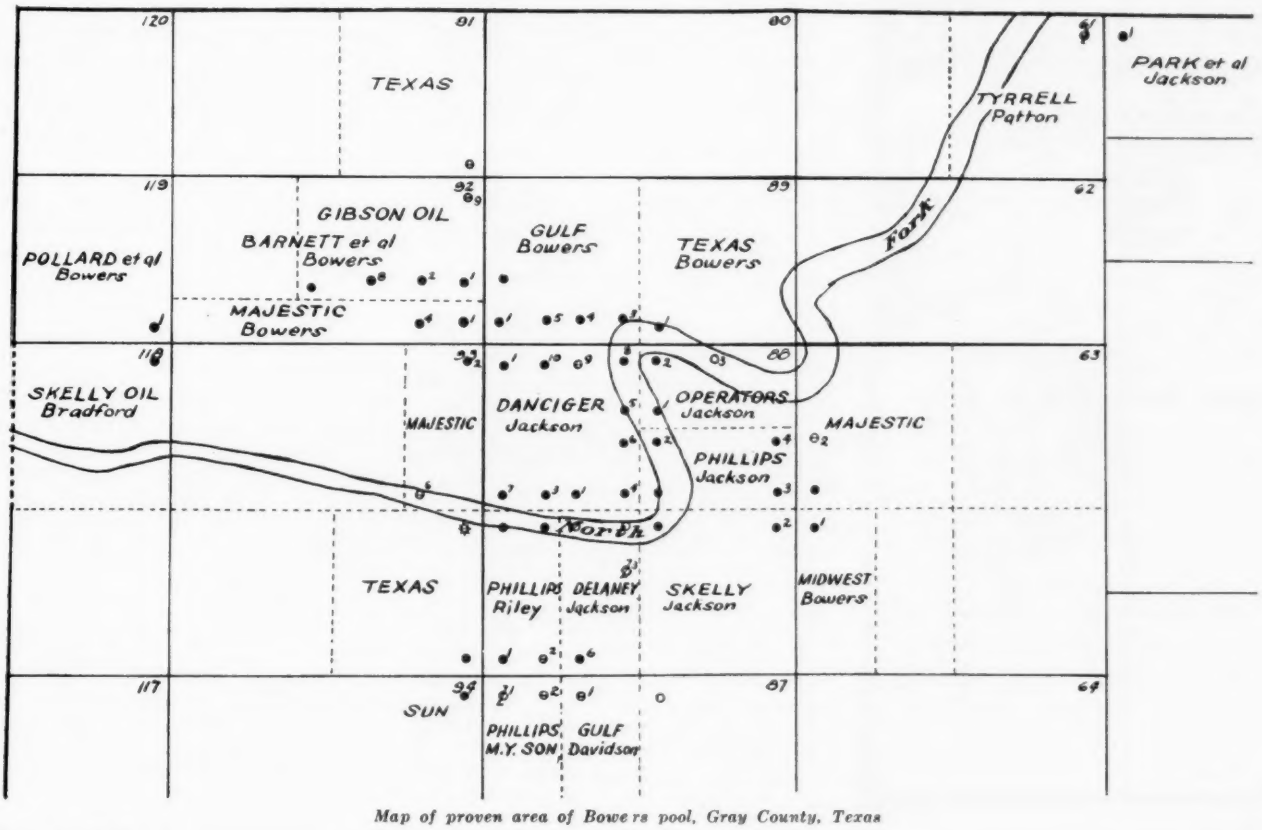
While development of the field has not been rapid, it is felt that the productive area is not yet fully defined. In addition to the seven inside locations which are being drilled at present, semi-wildcats are drilling about three and a half miles east, three-quarters of a mile southeast, two miles south and half a mile north of production. Two light wells three-quarters of a mile west of the pool are believed to define the limits of production on this side.

Most of the drilling in the field is done with cable tools, although the rotaries are not being neglected. The standard rig users find their greatest difficulty is with the big gas, sometimes amounting to 60-70 million feet which is often encountered at about 2500 feet. The red shale on top of the pay gives trouble by caving. When rotaries are used for drilling the wells are often completed by this method. In order to keep mud and water out of the sand, oil is used for circulation while drilling in.

The Panhandle has felt the general depression in the oil industry the past year. There is not much resemblance to the activity of two years ago. Gray county is perhaps the most active county in the district.

Ohioan Opens Bulk Plant in Florida

NEW SMYRNA, Fla., June 11.—G. L. Horton, who for eight years was a partner of Howard Peck in a Ford Agency at E. 14th street and Central avenue, Cleveland, has erected a bulk plant in New Smyrna. Mr. Horton is now purchasing gasoline on the open market. The Ford agency in Cleveland was conducted under the name of Peck & Horton Co.



Map of proven area of Bowers pool, Gray County, Texas

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Butane From Gasoline Plant Used in Repressuring

TULSA, June 7

A NOVEL experiment in repressuring oil sand is being carried on by an operator in the Burbank pool, Osage county, Okla.

Liquid gas—butane—from a gasoline plant is being put into two oil wells, which are not being produced. With sand temperature of about 120 degrees, Fahr., the liquid vaporizes and finds its way into the sand as a gas.

The experiment has been under way about 30 days and it is too early to determine what the effect of this form of repressuring will be. Some slight results are noted already, however. There is a fluctuation is the gravity of the oil produced from the nearby wells. This variation amounts to as much as two degrees on the A.P.I. scale, whereas the gravities were practically constant before the butane was put into the wells. It evidently is coming through in "batches" in the oil.

There is also a change in the built-up pressure of the producing wells near the intake wells. They have been operated under about 10 points vacuum and, before the start of the repressuring experiment, the closed-in pressure at well head at the end of an hour would be around two pounds. Now, in the same period of time, the wells will show pressures of five or six pounds.

No change has resulted in the oil production from wells expected to be affected by the repressuring. It is pointed out by the company that, with a sand face of 50 to 60 feet and wells 660 feet apart, it probably will be several months before production will show a gain.

The amount of butane put into the wells is the surplus the gasoline plant gives the production department and varies from 3000 to 30,000 gallons per day. About a million gallons have been put into the two wells to date.

In the Panhandle of Texas the Humble interests have been mixing natural gasoline with Panhandle crude before pumping it through its pipe line south. This has been done to reduce the viscosity of the oil rather than as a means of transporting the natural gasoline to the refinery.

For the purpose of reducing viscosity of the oil the lighter the gasoline the greater effect it will have, providing losses can be controlled to a reasonable figure while the mixture is being pumped through the lines. The gravity of butane which is being introduced into the Burbank wells is 110 Be. and in liquid form it would have a marked effect in reducing the viscosity of any crude with which it might be mixed. As a liquid it would be efficient in washing crude from the pores of a sand since it would reduce the surface tension of the oil.

While butane becomes a gas at about the melting point of water it is evident that it is a gas when it enters the Burbank sands at a temperature of 120 degrees Fahr. But even at this temperature a large part of the gas will be absorbed in the oil. At a pressure of about 57 pounds per square inch it would be in a liquid state at 120 degrees, Fahr.

As stated previously pressure is building up on the sand although the introduction of butane has been going on only a short while. As this pressure increases, the oil in the sand will absorb more and more of the butane, giving the effect of reducing viscosity.

Natural gasoline manufacturers are working to develop a market for the butane which they find it necessary to eliminate largely from their plant made to meet the higher quality standards being demanded by blenders. Thus far the butane market is not large but many manufacturers feel that they will find a place to sell it in the future.

It is thought possible by some that the process of introducing butane into the sands will be a partial storage of the fraction for future use. It is thought that large quantities of the butane being put in the wells now might be recovered in the future as buyers appear. This theory is in line with some of the gas storage practice which has been undertaken in the east where natural gas has been pumped into exhausted gas sands near to market in the summer and removed in the winter at times of peak loads.

Specialist in Refinery Accounts

CHICAGO, June 9.—Henry W. Ralph, until recently in charge of auditing and accounting for the Indian Refining Co., Lawrenceville, Ill., has resigned and opened offices here, to specialize in accounting and control methods for the petroleum industry. His offices are at 820 N. Michigan Ave.

Mr. Ralph will be recalled as the author of articles on oil company accounting and cost allocation methods appearing in NATIONAL PETROLEUM NEWS in 1925. He has also been active in the work of uniform refinery accounting methods being carried on by the National Petroleum Association.

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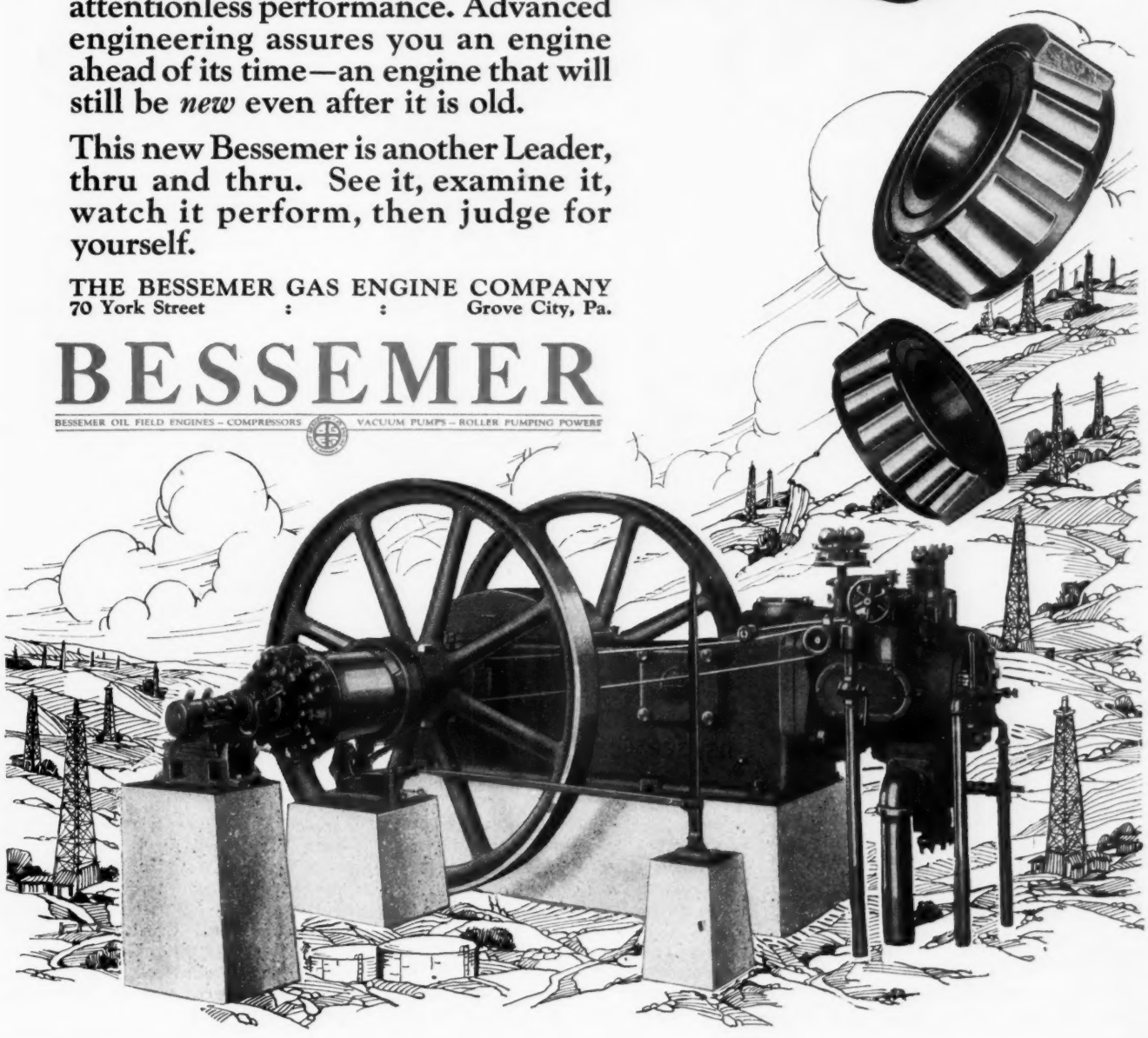


Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

An impression prevalent in some quarters that the oil and gas bureau of the West Texas Chamber of Commerce favors a protective tariff on crude petroleum and its products is denied by W. B. Hamilton, Wichita Falls, chairman of the bureau.

The impression grew out of an attempt to have the bureau take such a stand at a recent Amarillo meeting.

Conversations with members of the bureau have convinced Mr. Hamilton, he says, that such a proposal is disapproved except by the individual responsible for introducing the resolution.

"We have taken the stand," said Mr. Hamilton, "that the most effective immediate way to conserve to Texas the value of its greatest natural resource is for the conservation agency of the state, the Railroad Commission of Texas, to establish proration of oil runs in flush fields and prevent waste of gas. . . . Orderly development of new oil pools can be secured, greatest recovery of oil per acre obtained, and all spread over a longer period of time, returning the producer a better price and greater wealth for the state."

* * *

Lee Stoner, resident manager at Tampico of the East Coast Oil Co. of Mexico, S. A. (Southern Pacific railroad subsidiary) is spending a month's vacation at his old home in Bardstown, Kentucky.

* * *

Fred Dumrease, formerly assistant to the Texas division manager of Prairie Oil & Gas Co., at Eastland, has been transferred to Kansas, where he will have charge of land department operations. John M. Mouser heads Texas operations at Eastland.

* * *

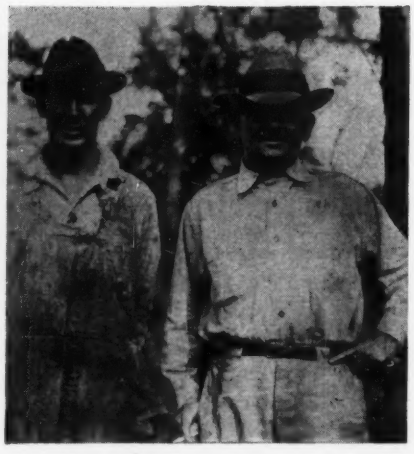
J. Withers Clay is now engaged in consulting geological work at Brownwood, Texas. He was formerly with the Woodley Petroleum Co., at Shreveport, La.

* * *

Fred Steinkruger, manager of the Mexico interests of the Union Oil Co. of California, has returned to Tampico after a six weeks business trip that included a visit to home offices in Los Angeles.

* * *

Bert F. Weekly, president of the Weekly Oil Corp., has moved the company's headquarters to Fort Worth, from Odessa, Texas.



J. S. McKinstry, driller and W. S. Bradley, tool pusher, Humble Oil & Refining Co., at Goose Creek, Texas.

Two casing records were made in completing the deepest Gulf Coastal producing well by the Humble Oil & Refining Co. at Goose Creek. A total of 5258 feet of 9¼-inch, 40-pound casing and a string of 6159 feet of 6⅝-inch, 28-pound casing were set in the No. 73 Simms-Smith well, about a mile northeast of earlier Goose Creek production. The surface string consisted of 1900 feet of 13⅜-inch, 57-pound casing.

Work of putting down the well, which made initial production of about 900 barrels daily, was carried on by J. S. McKinstry, driller, and W. S. Bradley, tool pusher at Goose Creek. Their only difficulty in completing the well was a fishing job which, it is explained, resulted from causes other than the setting of the record Coastal casing lengths.

Before completion of the Goose Creek well the deepest producing hole on the Gulf Coast had been the Pure Oil Co.'s No. 4 Sweet Lake, in southern Louisiana, near Lake Charles, at 5924 feet. The deepest test ever drilled on the Gulf Coast was the No. 6 Gladys of the Yount-Lee Oil Co., at Spindletop, near Beaumont, where 6765 feet was attained before the hole was abandoned.

* * *

Leon J. Pepperberg, geologist and engineer, advises he closed his Dallas consulting office June 1, and hereafter his address will be in care of the Ohio Fuel Gas Co., 99 North Front street, Columbus. He is moving his family to Columbus, where he will be consulting geologist for the Columbia Engineering & Management Corp., which manages the Columbia system, consisting of properties of the Columbia Gas & Electric Co.

Mr. Pepperberg has a long record of geological and engineering work, including service on the Nebraska Geological Survey and the United States Geological Survey. Afterwards he was identified with the Southern Pacific railroad interests, the Texas & Pacific Land Trust, the C. J. Wrightsman interests and other operating companies.

* * *

J. E. ("Brick") Elliott, head of the Elliott Core Barrel Co., Los Angeles, has added new equipment to his already extensive group of transportation facilities. First, of course, came motor cars; but that is history. Later, he bought a yacht. Now he owns an International six-passenger airplane, in which he recently toured the Mid-Continent. Besides his manufacturing interests, Mr. Elliott heads oil producing companies bearing his name. He is also first vice president of the American Association of Petroleum Geologists.

* * *

C. E. Dobbin of the United States Geological Survey has moved his offices to Denver from Washington. He will act in a consulting capacity for the leasing section of the Survey in the Rocky Mountain states, Oklahoma and California.

* * *

E. B. Avera, formerly of the engineering department of Pure Oil Co., at Fort Worth, has been transferred to the Gulf Coastal district with Houston headquarters.

* * *

J. R. B. Moore, assistant manager of the land department, Vacuum Oil Co., has returned to Houston headquarters after a business trip to Kansas City and intermediate points.

* * *

L. J. King, vice president in charge of the producing division of the Associated Oil Co., at Los Angeles, rose to his present position from that of a well puller nearly 25 years ago. He has held executive positions since 1916, when he became general superintendent of production for the Associated in the San Joaquin Valley district. All the company's producing operations except those in Texas now come under his general supervision. Through the affiliated Amazon Drilling Corp. he has entire charge of the Associated's development programs.

* * *

Three employes of the Casper district, Texas Production Co., are wearing watches presented them as winners of the 1927 contest for best kept leases. They are W. C. Moore, gang pusher, Crary lease, Big Muddy field; Orlia Ross, pumper on the Crary lease; and M. G. Wassenberg, pumper on tract V, Salt Creek field. Judge F. W. Freeman and General Superintendent A. B. Patterson of the Denver offices were present when the awards were made.

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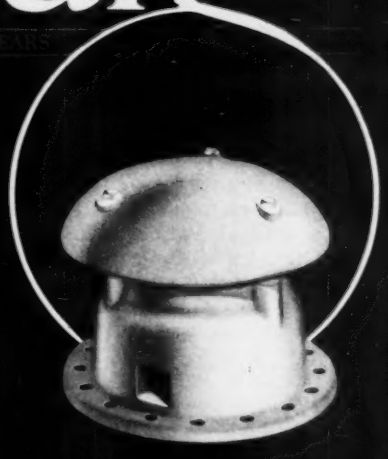
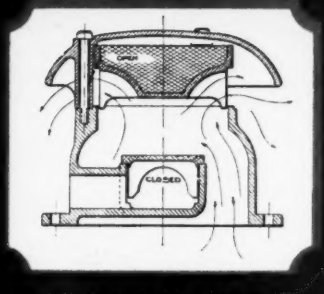


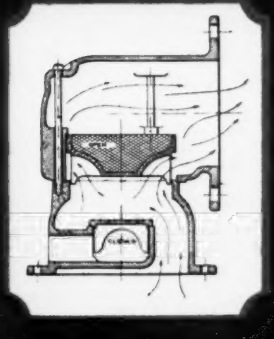
Vapor Tight Equipment

AMONG the important items of Parkersburg Vapor Tight Equipment is the *Pressure-Vacuum Gauge*. This gauge has never failed under the most severe tests and temperature conditions. It is designed to release large volumes of vapors. It can be supplied with a pipe outlet.

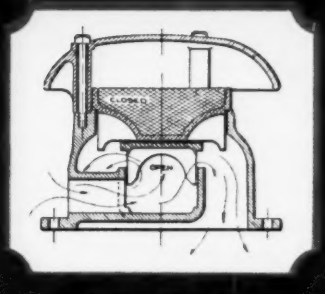
For complete information on Parkersburg *Pressure-Vacuum Gauges* and other items of Parkersburg Vapor Tight Equipment, send for Section "S," Catalog 26.



1 Action Releasing Vapors



3 Pressure Vacuum Gauge with the Pipe Outlet



2 Action Relieving Vacuum

Parkersburg Products

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PARKERSBURG EQUIPMENT THE STANDARD FOR COMPARISON THE WORLD OVER

Laboratory Staff Should Stand Guard Over Quality of Refinery Products

By L. S. Cannon*

Read before Technical Division, Western Petroleum Refiners Association, Shreveport, La., June 4-5

IN THE technical control of refinery operations it is necessary to have a laboratory, complete personnel of testers, chemists and engineers. Small scale units designed to operate as nearly like the refinery counterparts as possible, are fitted up so that any desired operation met within the refinery itself may be carried out but on a much smaller scale. This small equipment is particularly useful, not only for checking current refinery operations, but is necessary for the evaluation of new crudes which are constantly being submitted by the company's production department.

In this manner crudes may be evaluated and methods particularly adapted to refining a particular crude are prescribed by the technical force.

To facilitate the proper evaluation of crudes, to control the current refinery operations and the development of new processes, a laboratory complete in every detail is essential. In order to systematically and scientifically carry out this work, the laboratory may be divided into five groups:

1. The control testing laboratory
2. The experimental laboratory
3. The analytical laboratory
4. The research and development laboratory
5. Motor fuel and lubricating oil testing laboratory

The above divisions have their respective duties, yet each are so closely related that they may and do overlap.

The general control laboratory should be equipped with all modern apparatus and have a personnel of competent inspectors and chemists. The duties of this department are testing of the constant streams of samples which are taken at periodic intervals from the plant. The results of these periodic inspections are immediately phoned to the operators of each unit so that proper operation of the units can be maintained by the man in charge. This group is charged with the responsibility for the quality of all products manufactured, the examination of competitive products, and the recognition of all points of merit displayed by them.

Small Scale Refinery Units Needed

THE essential factor of the experimental laboratory is the operation of the small scale units which are designed to duplicate as near as possible, the refinery units. The duties of this division are the evaluation of the new crudes which are submitted by the production department of the company, various kinds of distillations, chemical treatment, filtration, centrifuging, wax pressing tests, etc. To this experimental laboratory are sent all the samples of crudes and intermediate products from which yields of the refined finished products are desired.

The staff should consist of chemists and preferably stillmen and treaters who have had experience with small scale work. These men must be available at any time to be sent to various departments to aid in analyzing difficulties in plant operation. They are charged specifically with determining the potential yields of products from actual or proposed refinery stocks. The equipment of this department must be in fact a miniature refinery having various size stills, agitators, pipe stills, wax presses, centrifuge machines, percolating filters, etc.

The analytical laboratory deals with the analysis of all materials bought by the company, carries on the analyses of chemicals, compounded oils, asphalts, wax, sulfur, salt determinations and various analytical tests which are necessary for the efficient control and operation of a refinery.

The research and developing laboratory consists of highly trained chemists and chemical engineers, whose duties are to investigate various processes and equipment of recent development to determine their merit, to develop new methods of processing and to carry on the fundamental research concerning the behavior and properties of petroleum products.

The motor fuel and lubricating oil testing laboratory is concerned in the testing of motor fuels for their antiknock value and comparing these with competitive motor fuels, also special equipment for testing the value of a lubricating oil and its comparison to competitive products. Investigations are always in progress endeavoring to improve both the motor fuel and lubricating value of current products. Many universities are carrying out work along these lines and are making many valuable contributions to the industry.

Competition today is so great that it is necessary for research departments to discover new methods and perfect new equipment whereby a lower refining cost may be had with a higher quality product.

The Investigation of Crude Oils

NEW or prospective crudes for refining must be carefully investigated by the laboratory for accurate evaluation. New fields or wells which are brought in by the production department of the company are furnished in sufficient quantities for complete tests. Important factors which are included in this investigation are as follows:

1. The physical properties of the crude.
2. The yield of the refined product.
3. The quality of the refined product.
4. The lubricating oil value or cracking value of the crude.

The preliminary tests on a crude are usually gravity, sediment, sulfur, water and salt content. Further characteristics of the crude are determined as to whether it is a paraffin, asphalt or mixed base. Crudes containing considerable water, salt or sediment are more costly in refining because frequently special methods of removing salt settling equipment is necessary.

In particular salts and sediment are very detrimental to efficient operation due to depositions in the still bottoms or pipe still tubes resulting in the inefficient transfer of heat, formation of hot spots or burning out of tubes, thereby causing many needless shut-downs. Magnesium chloride will hydrolize to form hydrogen chloride which is very corrosive in the still at points of condensation.

Experimental still runs are made to determine the yield of the various products from the crude. The yields of gasoline, kerosene, gas oil, and fuel oil are carefully determined in

*Assistant Chief Chemist, Marland Refining Co.

order to work up an estimate on this crude.

Before the further value of the crude can be determined, a careful treatment is made on the gasoline and the kerosene. The cost of chemicals for refining is an important item. The light oil products after treatment, should be tested for quality, that is, color, stability, and motor fuel value.

The sulfur and hydrogen sulfide content of a crude are determined for several reasons. First, where large quantities of these two substances are found, there is considerable corrosion of the equipment, and thus the added expense of refining chemicals to combat this corrosion is costly and in an estimate of the ultimate value should be taken into consideration.

Furthermore, high sulfur crudes in general cannot be used for other than cracking stocks and the remaining sulfur in the bottoms or fuel oil must be considered in their corrosive effect to pressure still equipment.

Running Tests on Residual Oil

AFTER the gasoline, kerosene and gas oil distillation, the residual oil is then tested for two possible uses, (1) its value as a source for lubricating oil, and (2) its cracking value provided it is not to be used in processing for lubricating oils, when determining the value of a sample for lubricating oil.

The distillation with steam is continued until the still bottoms show the desired flash and viscosity. The raw wax distillate is then re-run to approximately 10 per cent bottoms, and this overhead stock or cracked wax distillate is dewaxed by chilling and pressing. The dewaxed oil or pressed distillate is reduced to the proper flash and viscosity for the yield of the desired quality neutral oil; the raw neutral oil is then given the necessary acid treat, neutralized and percolation filtered or contacted to the color wanted. Losses in treating and color on the finished oil are of major importance.

The slack wax which was pressed from the cracked wax distillate, after melting up is chilled on the sweat pans and the oil removed from it. The yield of scale wax of desired melting point and oil and moisture is then determined.

The bottoms from the original crude showing proper viscosity and flash, are taken from the still and cooled. The proper acid treatment and contacting is then made. The loss due to formation of sludge, acid treatment and the color of the contacted stock are important tests in determining the value of this heavy lubricating oil.

In order to determine the actual amount of low pour test or dewaxed bright stock in this contacted stock, it is necessary to remove the clay, blend with 2 parts of naphtha and 1 part oil, then centrifuge after chilling. The pour test is taken at regular intervals to see that the proper dewaxing is taking place.

After the petrolatum is removed, the blended oil is reduced to flash and viscosity. It is then filtered for yield of finished bright stock. Complete physical tests on both neutral oil and heavy oil are necessary to estimate their lubricating value.

Should the oil be unfit for or not to be used as a source of lubricating oils, it is charged to an experimental cracking still where the yield of cracked gasoline is determined, including yields of any other by-products.

The crude oil charged to the stills from which we obtain our raw straight run, light oil products is to be controlled according to its nature. Chemicals are necessary for many crudes, particularly those high in sulfur content and are introduced at various points in the still depending upon its use. In a still running west Texas crude, lime is introduced in the pipe still and ammonia gas is introduced in the tower just below the point where hydrochloric acid vapors are likely to condense.

Hydrogen sulfide is also formed in the crude distillation and should be controlled by chemicals. Caustic or soda ash solutions are introduced in the condensers where, after thorough mixing, the hydrogen sulfide can be completely neutralized. The laboratory, by examination of the scale formation in the pipe still, can tell if proper lime injections are being made.

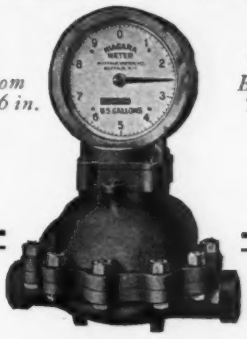
Examination of the return bends etc., will tell if proper results are being obtained from the ammonia. Qualitative tests on the raw gasoline and also stability tests on this gasoline will tell if proper hydrogen sulfide neutralization is being obtained.

IMPROPER chemical control may cause sulfur scale formation in the run tanks, which would very likely affect adversely the color, stability, and non-corrosive properties of a finished gasoline.

Samples of the raw products are sent at regular intervals to the laboratory for physical tests or other examinations. An Engler distillation insures a uniform distilled product. Color determines if proper fractionation has been made and if there has been any contamination. Flash and gravity are additional control tests for kerosene. There are at least six important factors which have been determined by laboratory experimental work, and are now particularly under laboratory control, which determine the stability of a finished product.

First: The distillation temperature; second, the control of chemicals; third,

NIAGARA OIL METERS



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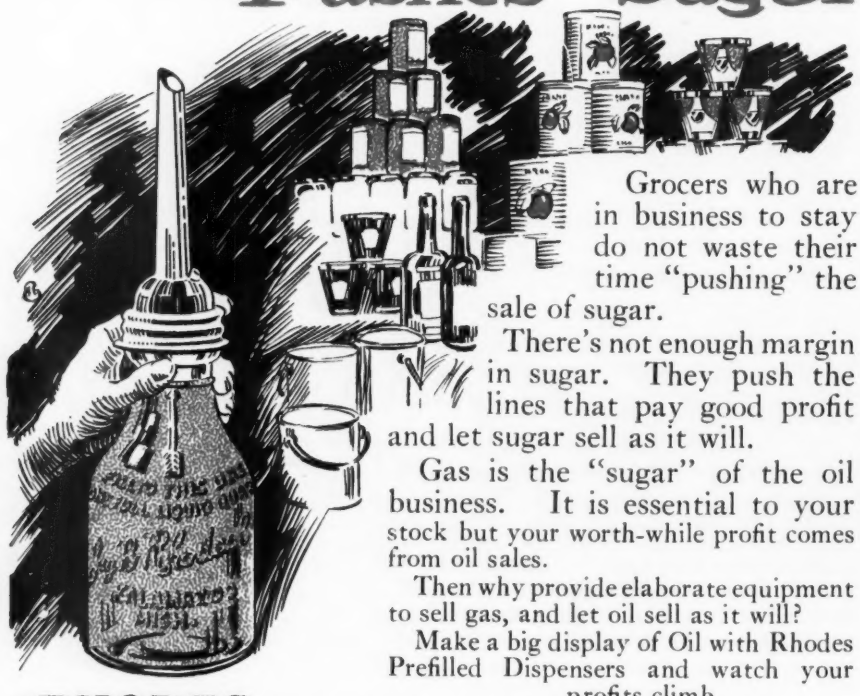


Grocers who are in business to stay do not waste their time "pushing" the sale of sugar.

There's not enough margin in sugar. They push the lines that pay good profit and let sugar sell as it will.

Gas is the "sugar" of the oil business. It is essential to your stock but your worth-while profit comes from oil sales.

Then why provide elaborate equipment to sell gas, and let oil sell as it will?

Make a big display of Oil with Rhodes Prefilled Dispensers and watch your profits climb.

RHODES *PRE-FILLED* *OIL DISPENSERS*

Jay B. Rhodes Company
Kalamazoo, Michigan

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes.
For Domestic or Export.

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity—
This Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

segregation of raw stocks; fourth, concentration and condition of plumbite solution; fifth, clean agitators; sixth, clean run tanks. Regular inspections and tests by the laboratory keep all of these factors up to the minute.

The control of sweetening raw refined products is handled in a very simple manner. Besides inspections and personal directions by the control personnel, samples of all chemical stocks are tested before using. The lead and caustic content of the plumbite solution, the causticity of the caustic solutions, are determined. Using these stock solutions, we determine experimentally the amounts to be used, the sulfur necessary to sweeten and the quality of the finished product.

Kerosene refining is very similar to that used in gasoline refining and the control points are practically the same. However, considerable quantities of kerosene, particularly that from the high sulfur crudes, is distilled off-color and requires special treatment for a good colored finished product. The two general methods used are: first, the light acid treat followed by Fuller's earth contact method after sweetening; second, the heavy acid treat before sweetening. The former is used where the kerosene does not become sour after contacting, or if slightly sour after contacting, can be made to sweeten by agitation with caustic or soda ash solution. The latter method, due to the cost of acid, is not preferred, but must be used as a substitute for the former when certain kerosene products give very sour kerosenes after contacting. The laboratory determines how each batch of off-colored raw kerosene is to be treated, and the chemicals necessary for each.

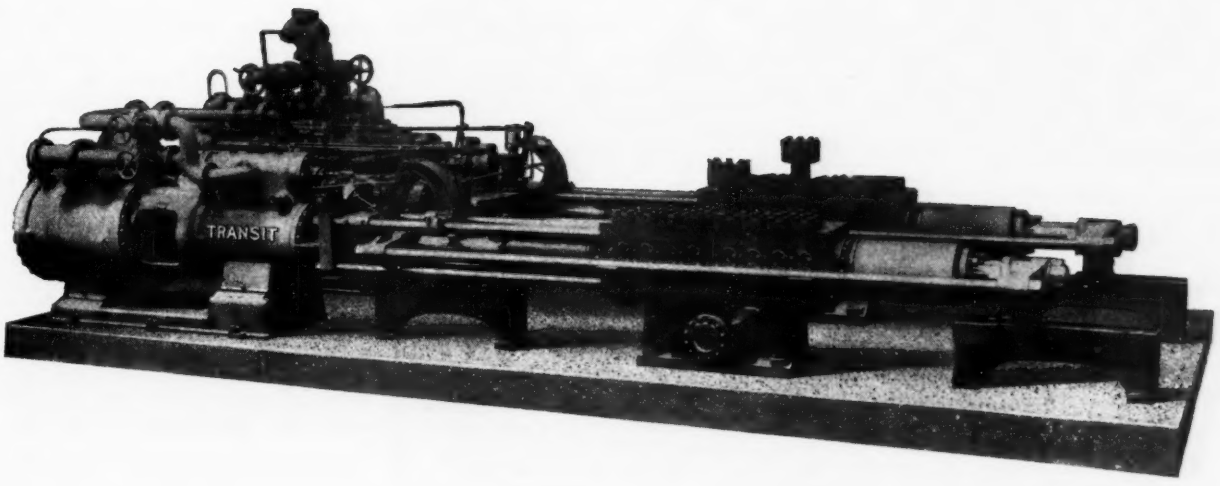
Pressure products may be divided into two general classes; first, pressure distillate which is re-run for its gasoline content such as the Dubbs still product; and second, finished pressure gasoline such as Cross gasoline processed through the Gray vapor phase equipment. The laboratory control is very similar in both cases. Where chemicals are used such as lime to combat scale formation, corrosion analysis of the tube scale will determine if the lime is being injected in proper quantities.

Caustic solutions which are used to neutralize the hydrogen sulfide formed during cracking are tested regularly. Engler distillations to a predetermined temperature cut will give its gasoline content, or a still run will determine this direct.

Chemicals used in treating pressure distillate are tested by the laboratory. As the distillate treatment proceeds, samples are taken after each step and finished experimentally in the laboratory to see that each step is carried out properly.

Whether a low temperature steam distillation or a dry distillation at higher temperature is to be made,

Hotter–Heavier–Faster



AS cracking processes become more and more intensified, more and more is expected of the pumps. Above we illustrate one type of TRANSIT Hot Oil PUMPS produced to meet the demand for a pump to handle hot oil; hotter, at heavier pressure, and faster than heretofore.

It is a strictly up-to-date Hot Oil Pump for the larger installations of cracking processes and vapor phase systems. Size 18 and 30 x 6 x 24". Capacity 200 barrels per hour, against 1000 to 1500 lbs. pressure. Maximum temperature of hot oil which can be handled, 1000° F.

Description and Prints on request.

Representatives

FRICK-REID SUPPLY COMPANY
Tulsa, Okla., or any store.

ASSOCIATED SUPPLY COMPANY
Los Angeles, San Francisco, Bakersfield, Fellows

E. L. WILSON HARDWARE CO.
Beaumont, Texas.

NATIONAL TRANSIT
Pump & Machine Co.
Oil City, Pa.

DISTRICT OFFICES
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THE GLOBE SUPPLY & MACHINERY CO.
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REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

Gott
WATER CAN
PURE WATER
Gotkool
WATER CANS & COOLERS
Try a GOTT Water Can and you will always be a user. Keeps water pure and cool, easy to carry and always near. Made in 1½, 3, 5 and 10 gallon sizes.
GOTT Water Coolers, 3, 5, 8, 10 and 20 gallon. Order from your supply store.
H. P. GOTT MFG. CO.
Winfield, Kansas
KEEP PURE WATER ALWAYS HANDY

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
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Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
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BETHLEHEM STEEL COMPANY, *General Offices, Bethlehem, Pa.*

District Offices

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Los Angeles Seattle Portland

Fig. 720, screwed, Jenkins Bronze Action Valve, one of many types of Jenkins Valves that find application in the oil industry.

Wide open — instantly!

On soot blower piping—on hose connections for wetting-down ashes—on other lines in boiler room and elsewhere—Jenkins Rapid Action Valves are widely used. A short pull of the hand lever and the valve is wide open.

Another point, too—this valve stays open automatically without set screws or locking devices. And when it closes water hammer is avoided by regulation of the closing of the disc on the seat.

These valves follow typical Jenkins design, strong in every detail. They can be relied on to the customary long-term Jenkins service.

Folder 70-A will give you complete details.

JENKINS BROS.

80 White Street, New York, N. Y.
524 Atlantic Avenue, Boston, Mass.
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646 Washington Boulevard, Chicago, Ill.

JENKINS BROS., Limited
Montreal, Canada — *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

each is controlled by taking samples of the gasoline for laboratory tests. In the case of the former method of distillation, the product should test sweet after a plumbite wash.

In the latter method, the gasoline vapors are further treated for improvement in quality such as color, stability, etc. Tests on this gasoline are made to determine if the distillation and treatment are giving high quality uniform finished products.

Where the Gray tower vapor phase treatment is used for the re-run pressure gasoline or the finished gasoline from the Cross stills, the laboratory uses distillation, color and stability tests as control points.

Chemicals which are used to neutralize the sulfur dioxide and hydrogen sulfide are tested for caustic content and the gasoline is tested for color and stability to insure proper results.

The polymers which are formed in the Gray tower are continually washed out by small quantities of condensed gasoline. Samples of the polymer solution are distilled for gasoline content. In this manner, we are able to determine if proper temperature control is being kept on the tower. The polymer solution usually is 5 per cent of the charge to the tower and of this solution, approximately 90 per cent gasoline. Polymers formed in the tower are from .5 to .8 of 1 per cent of the charge.

In the treatment of pressure gasoline the control points are generally the same as for straight run gasoline.

The control of gas oil is of minor importance and the laboratory tests are mostly indicative rather than quantitative. Distillation, gravity, flash, fire and pour tests are the usual tests made on gas oil. These tests will indicate its quality as a fuel or cracking stock. If further investigation is necessary to obtain its actual cracking value, runs can be made on an experimental cracking unit.

Residual oil which is to be used for lubricating oil source is fire distilled with steam either in batches or continuously.

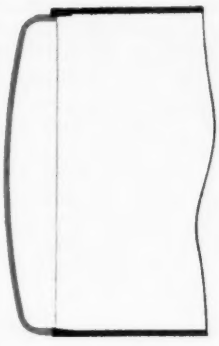
THE cracked wax distillate is made by re-running the raw wax distillate to approximately 10 per cent bottoms. It is tested for gravity, flash, fire, viscosity and pour test. These are very important indicative control points for a uniform product 30 to 32 A. P. I. gravity, 65-75 viscosity and 55 to 65 pour test are the usual tests for a mid-continent neutral oil charging stock. However, these tests are indicative and often a higher or lower gravity or viscosity will give as good results.

Pour tests will indicate wax in the cracked wax distillate and will to some extent tell us if the wax pressing condition is to be good or bad. The flash serves as an indicative test

ANOTHER STEP FORWARD

FOR

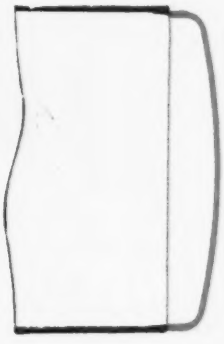
P.D.M. RED-HEADS



DISHED HEADS

ON

ALL TANKS



PDM RED-HEAD tanks of all sizes are now designed and built with dished heads. This new feature added to the already established reputation of PDM RED-HEAD tanks puts them "another step forward" in tank construction.

The use of the dished heads improves the appearance of the tank, fits it for meter system and pressure installations, and also in the larger capacity tanks eliminates reinforcing. This results in a more efficient yet simpler design.

PDM RED-HEAD tanks are designed and built to safely store inflammable liquids of any type. Highly combustible oils are confined with surety, as all seams are welded or riveted-and-welded, tested and guaranteed tight at a pressure of five pounds per square inch. They meet all the requirements of the Underwriters' Laboratories and can be furnished with Underwriters' Labels if desired.

PDM RED-HEAD tanks, carried in stock and ready for immediate shipment, range from 75 to 26,000 gallons in capacity.

A large quantity of PDM RED-HEAD tanks are carried in stock at our Pittsburgh shop to meet heavy demands, and reasonable quantities can be supplied directly from stocks located at the following points:

Portland,	Me.	Rochester,	N. Y.
Bangor,	Me.	Buffalo,	N. Y.
Hartford,	Conn.	Bridgeport,	Conn.
Albany,	N. Y.	New York City	

Write or wire for Specification Sheet No. 53 and price lists.

Pittsburgh-Des Moines Steel Company

1055 Professional Bldg., Pittsburgh, Pa.

RED-HEAD

1265 First Nat'l Bldg., Chicago, Ill.

PDM RED-HEAD
CLOSED TANKS FOR ALL PURPOSES

659 Hudson Ter'l Bldg. New York City

RED-HEAD

Des Moines, Dallas, Atlanta, Seattle, San Francisco

Why does he look at the label?

NOT one man in a thousand possesses expert knowledge that qualifies him to pass critical judgment on a suit of clothes. He has neither time nor the inclination to be an expert on the infinite number of articles he buys.

In his mind that label is a warranty of value —a personal promise of complete satisfaction from the manufacturer. He takes it for granted that the manufacturer whose name appears on the label knows his business. So he buys on confidence.

And the confidence of the buying public has become so integral a part of the success of manufacturer that he dare not jeopardize it by slighting value.

The American Steel Package Company was founded on the ideal of manufacturing a product identified with a high degree of value and during years of manufacture we have constantly strived to add to the esteem in which Defiance Steel Barrels are held among buyers in the oil field.

THE AMERICAN STEEL PACKAGE CO.
Defiance, Ohio

DEFIANCE
Distinguished for Honest Value

WHEN YOU WANT QUALITY AND REASONABLE PRICES

Mixed Carload in Drums—or Tank Cars

"INVINCIBLE" MOTOR OILS

"CASTOR-OI" (BEAN CASTOR BLEND) MOTOR OIL

100% Pennsylvania or Western Blends

To Match Any Oil Made

A. D. MILLER SONS' CO.

Millers Oil Refining Works

PITTSBURGH, PENNA.

Oldest Pennsylvania Refiners

for steam control. Low flash indicates cracking. The cracked wax distillate is run through the chillers and then dewaxed by pressing.

Pour tests and a periodic experimental press test on the pressed distillate are determined at regular intervals to insure keeping the presses operating uniformly. An experimental run is then made to determine the yield of raw neutral oil. The overhead product from the pressed distillate distillation is used mainly as gas oil or a source of non-viscous neutral oils.

The pressed distillate when reduced on the stills, is run to the desired flash and viscosity which are the most important tests; however, complete physical tests are made on the finished raw stock to insure uniform runs. A sample of the raw neutral oil is treated experimentally to determine acid necessary, treating losses, contact clay necessary and the final quality of the neutral oil. The most important tests are color and stability.

THE slack wax is tested from time to time until a desired oil and moisture content and melting point are obtained. The crude scale wax is sampled and run for a filter yield. Small filters of same proportionate diameter and height ratio are charged with 30-60 mesh Fuller's earth. The wax is then filtered at the usual temperature to the desired color and yields are determined.

After the gasoline, kerosene, gas oil and raw wax distillate are distilled, the heavy lubricating oil stock remains. The oil is tested regularly until the desired gravity, flash, fire, and viscosity are obtained. This stock is pumped either continuously or by batches to a large working tank.

Acid treats are then made in experimental agitators to determine the quantity of acid necessary, its strength, sludge conditions, and treating losses. Each batch charged to the plant agitators or tank is treated in this manner. This will furnish the necessary control for plant operation. Contacts are made on the experimental treat and also on the plant treat for comparison and control. Color and color stability will give plant treating efficiency. As a precaution the flash is taken on the acid treated cylinder stock to determine if the stock has become contaminated and sediment test is taken to determine if proper sludge settling has resulted.

After contacting the oil, the clay is removed before or after blending the oil with naphtha. Sediment tests are run to see that the clay has been completely removed, for small amounts of any sediment interfere seriously with the subsequent centrifuging for removal of petrolatum. The blended oil or so-called treated cylinder distillate is chilled to the desired temperature having uniform rate and then centrifuged. Regular samples

from the centrifuge are reduced and the pour test determined.

The dewaxed oil or wax free oil is charged to the stills and reduced to flash. It is important to determine gravity, flash, fire, viscosity, color, pour test, and carbon residue on the bright stock oil from the still.

When the oil has the desired tests, it is then charged to the percolating filters where it is filtered to the desired color. Experimental filters are run by the laboratory to determine yields, which plant operation should obtain. Color is a very important control point on the reducing stills, for the oil may be easily burned or darkened by insufficient steam or excessive heat. Flash is also important in that it tells us when all the naphtha is removed. Heat tests, carbon residues and emulsion tests are the necessary additional tests.

Daily petrolatum samples are taken from the centrifuge, and after naphtha reduction, the oil content of the petrolatum is determined quantitatively. This is important since considerable oil may be lost in removal of the petrolatum during the centrifuging of the blended cylinder stock.

This paper attempts to give in general the main control points and methods of control for refining operations. In view of the fact that refinery methods vary widely, all the specific methods used will not fit every refinery. We hope, however, that some of the features discussed will be of value to others and that we have made clear our reasons for believing that scientific control of refinery operations is essential and profitable.

New Patents

May 15, 1928

REFINING

Process for Distilling and Liquefying Coal—Friedrich Bergius, Heidelberg, Germany. Filed Nov. 24, 1926. No. 1,669,439.

Liquid and Gas Contact Apparatus—Frederick H. Wagner, Baltimore, Md., assignor to The Bartlett Hayward Company, Baltimore, Md. Filed Feb. 7, 1925. No. 1,669,638.

Liquid and Gas Contact Apparatus—Frederick H. Wagner, Baltimore, Md., assignor to The Bartlett Hayward Company, Baltimore, Md. Filed June 17, 1925. No. 1,669,795.

Mineral—Oil Vacuum Still—Arthur E. Pew, Jr., Bryn Mawr, Pa., assignor to Sun Oil Company, Philadelphia, Pa. Filed June 19, 1925. No. 1,669,839.

Refining Hydrocarbon Oils—Paul McMichael, Flushing, N. Y., assignor to Hydrocarbon Refining Process Co., Inc., New York, N. Y. Filed Jan. 12, 1925. No. 1,669,944.

Art of Heat Conversion of Hydrocarbon Oils—Frank A. Howard and Nathaniel E. Loomis, Elizabeth, N. J. assignors to Standard Oil Development Company, Elizabeth, N. J. Filed Nov. 28, 1921. No. 1,670,037.

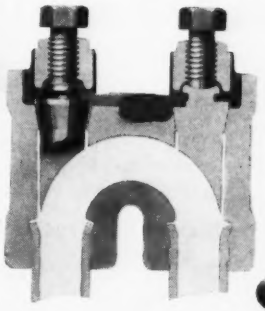
Process for Cracking Petroleum Oil—Carbon P. Dubbs, Wilmette, Ill., assignor to The Universal Oil Products Company, Chicago, Ill. Filed Mar. 9, 1923. No. 1,670,103.

Apparatus for Treating Oil—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Company, Chicago, Ill. Filed Nov. 1, 1920. No. 1,670,104.

Apparatus for Treating Hydrocarbons—Gustav Egloff and Harry P. Benner, Chicago, Ill., assignors to Universal Oil Products Company, Chicago, Ill. Filed Aug. 21, 1920. No. 1,670,105.

THE OHIO STEEL FOUNDRY CO. Develops Frictionless Return Bend for OIL STILLS

THE Ohio Steel Foundry Company with plants at Springfield and Lima, Ohio, have just recently announced a new return bend for use in tube stills and cracking units. It is known as the Ohiolock Frictionless Return Bend because of its design. All of the features that have made Ohiolock so successful since its introduction to the refining industry some time ago are embodied in the design of the Frictionless Return Bend as well as the added feature from which it takes its name — "Frictionless."



The valve head is so designed that a lifting tool can be easily applied from any position—this is an advantage that will cut many hours off your tube cleaning time.

As the inside diameter of the opening thru the bend is the same as the inside diameter of the tube, pressure drop is eliminated by maintaining a constant flow of oil through the bend which prevents turbulence.

The one piece plug or valve is held in position by a set lock that is easily applied. Just insert the plug, then the set lock, and by turning clockwise to a positive stop, the set lock is firmly held in position by a holding medium cast integral with the bend. A latch assembly engages the plug and valve, holding it in position. The latch is so arranged that when disengaged the plug can be easily rotated with a valve seating tool.

The entire fitting is manufactured of electric cast Hi Steel, withstanding corrosion and erosion and providing strength to meet all pressure conditions. The design is simple and eliminates completely the old threaded type of closure. Its quick action cuts the time of shut down for tube cleaning to a minimum.

Ohiolock Frictionless Return Bends are manufactured in many styles and sizes and on one type in particular, one tube may be replaced without removing the adjacent tube. This is a feature found only on Ohio Return Bends and one by which the refiner will surely profit.

The Springfield, Ohio, plant of the Ohio Steel Foundry Company, which is devoted almost entirely to the production of pressure castings such as return bends, valve bodies, cylinders and castings of similar nature, is ideally equipped for this work. They are the only cast steel return bend manufacturers who have in their own organization the complete personnel necessary from the engineering department through all the manufacturing processes to salespromotion. The ability to properly design, cast, machine, test and sell its fittings through one plant has reflected remarkably in the product offered to the refiner.

Complete information can be secured by writing direct to The Ohio Steel Foundry Company, Springfield, Ohio.

"These Ringseal Containers Are Making a Hit Everywhere!"

MANUFACTURERS who have adopted this dependable, leak-proof container find that jobbers, users—everybody becomes enthusiastic in its praise. Armored steel protection for local or export shipments, completely eliminating damage in transit and assuring contents' arrival in perfect condition.

Now You Can Be Sure

of Safe Arrival Anywhere

Our special Sealing Tool effects a seal that is leak-proof and positive. It seals with a single stroke and opens just as easily. Offered in sizes holding from 25 lbs. to 100 lbs. Let us send you a sample container and full details.

THE NILES STEEL PRODUCTS CO.
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GRANBERG PETROLEUM METERS

Are Precision Instruments of Established Merit

They are extensively used on Tank Trucks, Truck Loading Racks and Tank Car Unloading Lines and are universally satisfactory wherever it is desirable to secure accurate measurements.

We have made a technical and practical study of the problem of accurately measuring petroleum oils and are prepared to give expert advice and assistance on the subject.

Engineers from our home office are permanently located in the Middle West and on the Atlantic Coast, for the purpose of helping our customers with their metering problems.

It will pay you to use our meters and profit by our knowledge and experience.

GRANBERG METER CORPORATION
"Precision Meters for Petroleum Oils"
79 New Montgomery St. San Francisco, Calif.

Apparatus for Cracking Oil—Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Company, Chicago, Ill. Filed Jan. 3, 1921. No. 1,670,106.

Dee mulsifying Hydrocarbons—Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Company, Chicago, Ill. Filed Jan. 7, 1921. No. 1,670,107.

Process of Cracking Petroleum Oil—Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Company, Chicago, Ill. Filed Oct. 27, 1923. No. 1,670,108.

Dephlegmator—Herbert S. Mabey, Chicago, Ill., assignor to Universal Oil Products Company, Chicago, Ill. Filed Mar. 24, 1920. No. 1,670,118.

Apparatus for Treating Hydrocarbon Oils—Robert T. Pollock, Boston, Mass., assignor to Universal Oil Products Company, Chicago, Ill. Filed June 30, 1920. No. 1,670,122.

PRODUCTION

Sucker—Rod Hook—John D. Lemex, Tulsa, Okla. Filed June 24, 1927. No. 1,669,418.

Rotary Drill Bit—Irvin F. Harris, Waxahachie, Tex. Filed Mar. 25, 1924. No. 1,669,467.

Crown Block—Gustave J. Cormier, Seminole, Okla. Filed May 3, 1927. No. 1,669,656.

Swab Assembly—Charles S. Crickmer, Dallas, Tex., assignor to The Guiberson Corporation, Dallas, Tex. Filed Sept. 2, 1926. No. 1,669,812.

Oil-Well Bailer—Charles W. Cline, Wichita, Kans. Filed May 11, 1927. No. 1,669,864.

Tubing Shock Absorber—Samuel Chase, Long Beach, Calif. Filed May 11, 1926. No. 1,669,898.

Elevator—Edward L. Rick, Los Angeles, Calif., assignor to Dunn Manufacturing Company, Oxnard, Calif. Filed June 13, 1923. No. 1,670,048.

Rotary Disk Bit—Walter C. Bailey, Norwalk, Calif. Filed May 7, 1927. No. 1,670,092.

Well-Drilling Apparatus—John E. Reed, Brea, Calif. Filed Feb. 12, 1924. No. 1,670,124.

Oil-Well Gearing—Patrick J. Shouvlin, Springfield, Ohio. Filed Apr. 19, 1927. No. 1,760,168.

Well-Drilling Rig—Carl H. Besse, Tulsa, Okla., assignor to National Turnbuckle Derrick Company, Tulsa, Okla. Filed Sept. 18, 1926. No. 1,670,231.

NATURAL GAS

Gas Filter—Charles B. Gamble, Minneapolis, Minn. Filed Aug. 24, 1925. No. 1,669,461.

Method of Producing Carbon Black—Warren K. Lewis, Newton, Mass., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Jan. 2, 1925. No. 1,669,618.

MISCELLANEOUS

Sampling Device for Tank Cars—Sylvester Vernon Osburn, Kansas City, Kans., assignor to Walter J. Wilson. Filed May 14, 1926. No. 1,669,776.

Roasting-Furnace Construction—Dudley Baird, Berkeley, Calif., assignor to Nichols Copper Company, New York, N. Y. Filed Oct. 8, 1926. No. 1,669,925.

Process for Making Producer Gas—Henry L. Doherty, New York, N. Y. Filed Sept. 8, 1920. No. 1,670,102.

May 22, 1928

REFINING

Distillation Apparatus—Joseph Schneible, Chicago, Ill. Filed Nov. 12, 1923. No. 1,670,743.

Refluxing Tower—Roy Cross, Kansas City, Mo., assignor to Gasoline Products Company Inc., New York, N. Y. Filed Sept. 29, 1924. No. 1,670,762.

Process for Cracking Hydrocarbons—William L. Gomory, Chicago, Ill., assignor to Clifford M. Leonard, Chicago, Ill. Filed Feb. 14, 1920. No. 1,670,804.

Crude-Oil Preheater—William L. Gomory, Chicago, Ill., assignor to Clifford M. Leonard, Chicago, Ill. Filed April 30, 1921. No. 1,670,805.

PRODUCTION

Torsion Balance—Robert H. Miller, Houston, Tex. Filed April 18, 1925. No. 1,670,310.

Two-Piece Drum for Rotary Draw Works—Edward Timbs, Los Angeles, Calif., assignor to The National Supply Company of Delaware. Filed May 25, 1927. No. 1,670,600.

Tubing Holder—William L. Pearce, Houston, Tex., assignor to Texas Iron Works, Houston, Tex. Filed Oct. 18, 1926. No. 1,670,690.

Oil and Gas Separator—David G. Lorraine, Los Angeles, Calif. Filed June 3, 1925. No. 1,670,728.

F. L. Miller Joins Miller Sales

TULSA, June 9.—F. L. Miller, who has been in charge of the Kansas City sales offices of the Derby Oil & Refining Co., has joined the Miller Petroleum Sales Co. Robert Cunningham is now in charge of the Derby offices at 217 Dwight Bldg.

Anglo-American's Income Is Lower in 1927

NEW YORK, June 8.—Net income of the Anglo-American Oil Co., the former Standard Oil subsidiary that operates in the British Isles, was £208,213 after expenses, depreciation, taxes and other charges, compared with £1,635,235 in 1926.

F. E. Powell, chairman, is quoted in the Wall Street Journal as saying:

"Continued surplus of low priced oil and gasoline invading practically every market forced selling prices below remunerative levels. Selling prices declined so promptly during the year that inventory values showed a loss of £1,324,000, practically wiping out ordinary trading profits."

Anglo-American introduced ethyl gasoline into Great Britain last year. Its sales were good at first but adverse publicity in several newspapers caused sales to diminish. A government inquiry is being made into the product.

New Stations Building

Lebanon, Ky.—Stoll Oil Refining Co., Louisville, filling station.

Jeffersonville, Ind.—James McKnight, filling station.

Nashville, Tenn.—Standard Oil Stores Co., to build chain of filling stations to sell at cut price.

Scottsbluff, Neb.—Hillerege Garage, filling station.

Queen City, Mo.—Carl Smith, filling station.

Cornelia, Ga.—Worth Grant, filling station.

Fergus Falls, Minn.—Co-Operative Oil Co., filling station.

Grand Marais, Minn.—George McCoy, filling station.

West Point, Neb.—Standard Oil Co. of Nebraska, filling station.

Horton, Kan.—Scott Oil Co., bulk and filling station, and camp ground.

Aurora, Neb.—Manhattan Oil Co., filling station.

Chenoa, Ill.—Sweney Oil & Gas Co., filling station and garage.

Council Grove, Kan.—Mrs. J. T. Jacobs, filling station.

Ozark, Mo.—Oliver Lair and A. C. Adams, filling station.

Buffalo, N. Y.—Basyli Foroscij, filling station.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

31486.—**Gasoline and kerosene,** Damascus, Syria, agency.

31539.—**Lubricating oils and greases,** Bremen, Germany, agency.

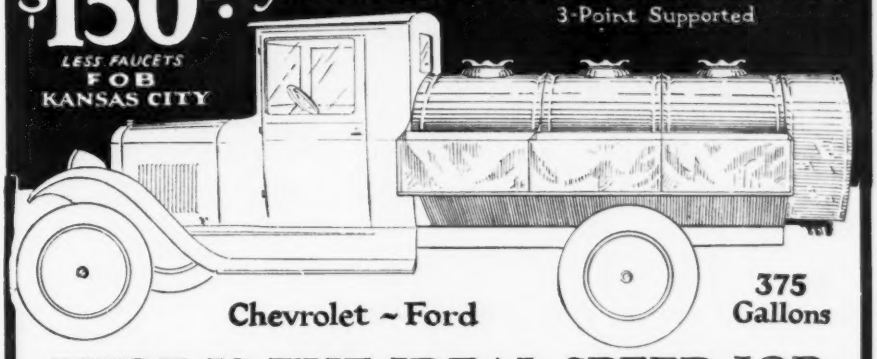
31540.—**Gasoline and kerosene,** Damascus, Syria, agency.

31541.—**Gasoline and kerosene,** Damascus, Syria, agency.

$150.00 for this Convertible TRUCK TANK

3-Point Supported

LESS FAUCETS F.O.B. KANSAS CITY



Chevrolet ~ Ford

375 Gallons

HERE IS THE IDEAL SPEED JOB

DESIGNED for any of the popular light or medium truck chassis. Convertible feature makes it adaptable to varying road, weather and seasonal trade conditions. For instance, side can racks may be completely detached when not in demand or when bad going makes extreme lightness imperative. Or, sections of side racks may be replaced by our horizontal lube tanks rear, or barrel carrier forward, holding a full sized barrel in upright position. Any of these conversions may be accomplished in the space of one hour by our special combination fittings.

The above price includes side can racks, but less faucets, f.o.b. Kansas City. Faucets, side lube tanks and barrel carriers, extra.

COLUMBIAN STEEL TANK COMPANY

KANSAS CITY — MISSOURI

Partition mounting reduces weight and lowers tank.

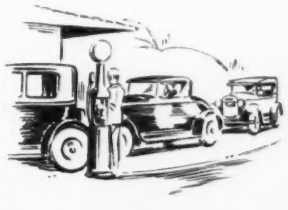
COLUMBIAN Partition Mounted 3-Point Supported TRUCK TANK

3 point support solves torque and vibration problem.

Increase Club, Lodge and Factory Business

ALLISON COUPON BOOKS

Accurate—Compact—Convenient



Clubs and similar organizations like the convenience of making their purchases on a coupon basis. Get their business for YOUR filling stations with Allison Coupon Books. Furnished in stock or special designs. Absolutely accurate. Send for samples and prices.

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Indianapolis, Indiana

Coupon Book Specialists Since 1888

Better Color

Stable color comes from the contact process.

Yet the success of this process hinged on the success of filtering.

Sweetland Pressure Filters met the test.

Today, more than one hundred refineries have installed this process and the Sweetland Filters that go with it.

In ordering filters for this work, order new ones—and let us tell you why it is better to do so.

United Filters Corporation

Hazleton, Pa.—Los Angeles Office, Central Building

Other Offices in Chicago—New York—Salt Lake City

Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

200 Stations Like This Planned for Cuba

Morocco lends its architectural charm and distinctiveness to this American enterprise in Cuba. To Castillos del Servicio, S. A. (Castles of Service), Havana, goes the distinction of building the first drive-in service station in Cuba, and this is it

ARTISTIC endeavor in service station construction is no longer confined to American oil companies, judging from the station pictured above, which opened in Havana, Cuba, May 12.

This is the first drive-in service station in Cuba, and the first of 200 which the company plans to erect in the island. Ceremonies appropriate for such an occasion marked the opening. The entire Cuban cabinet attended, as well as a personal representative of President Machado who was ill with a cold and could not take part himself.

This station is operated under the ambitious name of Castillos del Servicio, S. A., or "Castles of Service"—for those who are not up on their Spanish. That company was organized to build 200 similar stations in Havana and at strategic points along Central Highway.

The stations will be patterned along the lines of a Moorish castle, the company name being chosen obviously for its appropriateness to the architecture employed.

This first station follows the Moorish style as faithfully as possible where modern industrial equipment and service are essential features. Long narrow slits, reminiscent of ancient-day peep holes for times of threatening disaster, have been cut into the pillars, conforming to this style of construction. The lantern near the left pillar and the turrets also carry out the same idea.

In the midst of this old world atmosphere hold forth such modern contrivances for serving motorists as gasoline pumps, lube fountains and air scales. About every kind of the latest oil marketing equipment, excepting the rotary lift, has been installed, according to Paul T. Benton,

Besides the entire cabinet of President Machado of Cuba, the above gentlemen attended the opening of the first drive-in service station in Cuba. Paul T. Benton and O. W. Githens, vice president and president of Castillos del Servicio, S. A., respectively, are at the extreme left in the picture, Dr. Carlos Miguel De Cespedes, secretary of the Board of Public Works, Havana, is fifth in the front row in a white suit. At right of table, with a straw hat in hand is Carlos J. Rhode, representative in Cuba for S. F. Bowser & Co. Inc.

vice president of the company. Mr. Benton was formerly district manager at Miami, Fla., for Seaboard Oil Co., New York.

In the ground floor of the tower is the ladies' rest room. This room is elaborately furnished with such modern conveniences as paper towels, dressing table, easy chairs and table of wicker, potted palms and flowers.

Flags of Cuba fly from the two front turrets. Low odd-shaped posts through which heavy chain is suspended, form a fence around the plot of ground in the foreground. These posts also guard the corners of the pillars and the entrance to the tower, their blackness showing up in bold relief against the white of the station building.

Four 1000-gallon tanks for U. S. Motor gasoline of the Standard Oil Co. of Cuba and for Esso motor oil, constitute the station's storage.

That this service station venture in Cuba will be a success is virtually assured, so company officials say, by the fact that the government recently ordered the dismantling of all curb gasoline pumps in Havana within six months.

Among the public officials attending the opening day celebration at this station was Dr. Carlos Miguel De Cespedes, secretary of the Obres Publicas (Board of Works), who is responsible for the big road building program now under way in Cuba. O. Wolff Githens, president of the company, attended as did Carlos J. Rhode, representative in Cuba for S. F. Bowser & Co., Inc., Fort Wayne, Ind., manufacturer of oil marketing equipment.

Officers of Castillos del Servicio, S. A., besides Mr. Githens and Mr. Benton, are: Dr. Ricardo R. Firmat, vice-president; Gen. Juan Barragan, vice-president and treasurer; Dr. William Morales, Jr., secretary; and R. Ruiz del Vizo, Jr., vice-treasurer.

Petroleum Division at Ohio State

COLUMBUS, June 2.—A working model of a complete all steel oil derrick and rig, furnished by the International Derrick & Equipment Co. here, was a feature of the display of the newly organized petroleum division of the mining and mineralogy department of the College of Engineering, Ohio State University.

This new division is under the supervision of Edward O'Rourke, formerly with the Marland Oil Co. The display was exhibited at the annual engineers' celebration under the auspices of the engineers' council of Ohio State University on May 24 and 25.

How do YOU clean your Oil Drums?

The Perfection Vacuum System

Every oil jobber that wholesales Lube oils in drums has the problem of cleaning the oil drums that are returned. The Perfection Vacuum System provides a very efficient means for doing this at a very considerable saving in time and labor.

The Perfection Vacuum Pump has fourteen years of satisfactory service behind it. Every pump is guaranteed to produce at least twenty-five inches of vacuum.

This vacuum system, as illustrated, can be bolted to the floor or moved around as desired. It is equipped with a ¼ H. P. motor and can be connected up to any light socket.

Write for further information and prices.

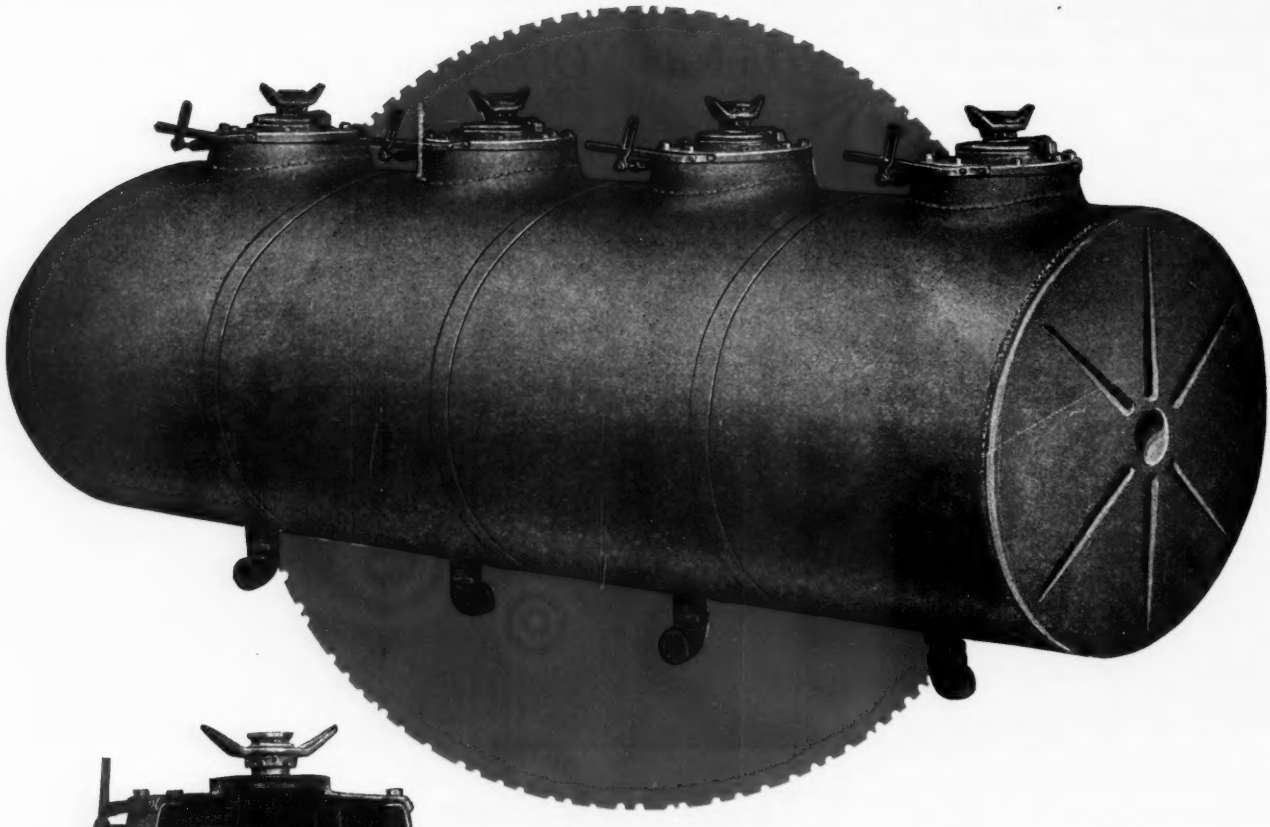
Perfection Manufacturing Company
2194 East Hennepin Avenue Minneapolis, Minn.

The Biggs Boiler Works Co. Akron, Ohio

Bulk Storage and Station Tanks

Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.
Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.

THE BIGGS BOILER WORKS COMPANY, Buchtel and Bank Streets, AKRON, OHIO
Eastern Sales Office: 300 Madison Ave., New York *Western Sales Office:* 35 South Dearborn St., Chicago



This Emergency Valve Is A Special Feature Of The

Vogt *MOTOR TRUCK* Tank

SIMPLE and positive operation of the Vogt emergency valve proves its correct design. Neat appearance is gained through the elimination of brackets or framework on top the tank for operating the lever arrangement. The lifting device is housed within the dome; only a small handle with a spring clip appears on the outside.

The ell shape valve body eliminates close pipe connections beneath the tank.

The Vogt Unit Control Valve arrangement and other improved features are fully described in our new bulletin MT-5. **Ask for a copy.**

HENRY VOGT MACHINE CO.
INCORPORATED
LOUISVILLE, KY.

BRANCH OFFICES:
NEW YORK
CHICAGO
CLEVELAND
DALLAS
PHILADELPHIA

Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

Two Continental Co. Reports Made

WASHINGTON, June 11.—Two Continental Trading Co. reports were submitted to the Senate on the last day of this session of Congress. One was made by Senator Walsh, the committee "prosecutor." The other was made by Senator Nye the chairman of the committee.

Both convicted Fall, Stewart, Sinclair, Blackmer, O'Neil, and Osler of conspiracy, fraud, corruption, perjury and betrayal in language not susceptible of misunderstanding and indicated that the Doheny-Fall and Sinclair-Fall acquittals were miscarriages of justice. Senator Nye blamed the court procedure for the miscarriages. He did not lay the failure to convict upon the government attorneys.

Why two reports? Neither senator explained. Reading between the lines, however, it is evident that each desired, probably, credit for public service for the party of which he is a member, Walsh for the Democrats and Nye for the digressive Republicans, a coalition of which controls the Senate.

Each appended a chronology of the "oil scandal."

One reason for suspecting that political motives actuated the making of two reports is the fact that Nye was at pains to point out that while the oil men contributed to the Republican campaign funds witness after witness testified that he or some other man contributed to the funds of both major parties.

Immediately Senators Walsh and Bratton challenged the accuracy of that assertion. They also challenged the accuracy of an assertion that at one time the assistant treasurers of the national committees of the two major parties had an office together, an intimation, by the witnesses that in the matter of funds for campaign purposes there was not much difference between the two parties, the main difference being that one party got the bulk of the money while the other did not.

Previous to the submission of the two reports Secretary of the Treasury Mellon informed the senate that more than $2,000,000 income taxes had been collected as a result of the investigation of the Continental company. Of that total $151,597 was collected from H. M. Blackmer, $141,-301 from James E. O'Neil and $246,-033 principal and $57,597 interest from the Sinclair Crude Oil Purchasing Co.

LOS ANGELES, June 11.—Oliver Spradling, formerly assistant to Bernard Dunn, vice-president and manager of Associated Supply Co., recently became Los Angeles sales representative of Youngstown Steel Products Co., the marketing organization of Youngstown Sheet & Tube Co.

Before buying any coupon books

. . consider these 6 important advantages

assured by RAND McNALLY

BUYERS for large companies like Sinclair, Texaco, Associated Oil say there are six outstanding advantages in using Rand McNally coupon books.

Check them over, by asking yourself these questions: (1) Are you sure of getting *quality* printing? (2) Is the numbering *guaranteed?* (3) Is the count *certified* correct? (4) Are you sure of getting deliveries just when you need them? (5) Is the price right? (6) Have you a wide variety from which to choose?

Oil companies both large and small have found that Rand McNally Coupon Books cover every point. There's no guess work.

For Rand McNally & Company are *specialists* in coupon book and ticket printing of every kind. They have skilled workers and a large modern plant equipped with the latest labor-saving machinery. Thus the cost of producing high-class work is held to the minimum.

Why take any chances? Your coupon books represent cash. Both you and your customers should have 100% protection. Before placing your next order, write or wire for samples and prices.

Special and stock designs in wide variety are on hand for selection by any oil company desiring to install the coupon book system.

RAND McNALLY & COMPANY

Dept. S-12

270 Madison Avenue, New York
536 S. Clark Street, Chicago
559 Mission Street, San Francisco

STORAGE TANKS, FIELD-BUILT

Guarantee Thickness Material

BROWN TANKS ARE OIL-TIGHT

Double Electric Welded

Send us your inquiry

BROWN SHEET IRON & STEEL CO.

St. Paul **Minnesota**

Looking in on a good thing!

JOBBERS who are "in" on the Penn-Empire proposition have this business-getting four point franchise at their disposal:

(1) A high grade 100% Pure Pennsylvania product under an established brand name.*

(2) Absolute territorial protection.

(3) The backing of a reliable old established refinery.

(4) Ample margin of profit.

These four points offer you unusual opportunities for developing a sound substantial volume among better dealers whose customers insist on quality lubrication.

We invite you to "look in" on our jobber franchise proposition while your territory is still open for exclusive Penn-Empire representation.

*Jobbers may also retail Penn-Empire Oils under their own brand name, if desired.

PENN EMPIRE 100% PURE PENNSYLVANIA OIL

Original Member of PENNSYLVANIA Grade Crude Oil Association Permit 19

PENN-EMPIRE

OIL and GREASE

EMPIRE OIL WORKS, Inc.
Oil City Pa.

"When you buy Penn-Empire you get the best"

New Equipment

A new booklet, " . . . four hundred engineers and eight salesmen" has been issued by the A. O. Smith Corp., of Milwaukee. The book deals primarily with the engineering achievements of the company in the production of automobile frames and the development of the Smithwelding process for the fabrication of pressure vessels, for refineries, couplings, and gas line pipe that has attracted great attention during the past two years.

* * *

Leader Iron Works, Decatur, Ill., has placed on the market a new steel mounted separable compartment truck tank known as its model 510. It is a full steel mounted job, including not only steel bolsters but steel sills as well. Compartments are separate. Grip nuts and lock washers are used for assembling to assure a rigid job. Bucket box provides space for four buckets and two funnels.

* * *

A. Y. McDonald Mfg. Co., Dubuque, Ia., has placed on the market a new hose nozzle which it claims combines speed with strength, balance and leak proof construction. It is furnished in either brass tubing or flexible tubing spout.

* * *

Waukesha Motor Co., Wausheka, Wis., has appointed H. J. Loebl, who was for several years in the service department of the Sterling Motor Truck Co., assistant in its service department. W. C. Keifer is in charge of field service.

* * *

Due to the growth of its chemical business, the Emery Candle Co. has changed its name to Emery Industries, Inc. It is claimed to be the world's largest manufacturer of stearic and oleic acid, producing over half the entire output of the United States.

* * *

The Ashland division of the American Rolling Mill Co. has ordered three 300 h. p. oil-electric locomotives to be built jointly by the Ingersoll-Rand Co., General Electric Co. and American Locomotive Co.

* * *

Celite Products Co., 1320 S. Hope St., Los Angeles, has off the press Bulletin 101 on Sil-O-Cel insulating materials and allied products.

This 16-page bulletin contains detailed description of all Sil-O-Cel insulating products including standard brick, C-22 brick, super brick, rotary kiln brick, powder and coarse grades, C-3 concrete, blocks, plastic and hard finish cements, and Fraxite high temperature cement and Celcote waterproofing.

Every Dollar spent on Triplexd buys SERVICE

Triplexd Insured Gasoline Pump Hose, when damaged thru accident or carelessness, can be returned to the factory for repair or adjustment just as if the hose were of defective quality.

That's why we say—"INSURED"—instead of "Guaranteed"

If carelessness or accident (short of fire or theft) prevents Triplexd from showing its true quality, our 1000 Day Insurance Contract protects you against loss

Why we "insure" TRIPLEXD PUMP HOSE

TRIPLEXD is the best gasoline hose made. For over ten years now it has set the standard for gasoline hose quality. We are proud of this fact, and from the very start have always guaranteed Triplexd against any failure that would reflect on its construction.

In our manufacture and in our guarantee of Triplexd it has been our aim to give our customers assurance of a *length of service* along with their length of hose. But careful records of the performance of Triplexd Hose on gasoline pumps throughout the country, based on the returns from our guarantee, showed us that the chief enemies of Triplexd's service life were beyond the reach of mere guarantees.

The records showed that of the Triplexd Gasoline Pump Hose put out of service before the expiration of its guarantee, most was damaged not through defect of its own, but through accident or mishandling.

It followed that if we wanted to give our customers a length of service along with their hose length, we would have to go beyond a mere guarantee. This is why we adopted the plan of "insuring" Triplexd, instead of guaranteeing it, by extending our agreement to cover FAILURE FROM ANY CAUSE short of fire or theft.

METAL HOSE & TUBING CO.
INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

TRIPLEXD

Insured GASOLINE PUMP HOSE

Four New Gasoline Plants in Panhandle Output Nears 300,000 Gals. Daily

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, June 4

WITHIN the past two years production of natural gasoline in the Panhandle fields of Texas has grown from 30,000 gallons per day to nearly 300,000 gallons.

Four new plants are building in the area and another is planned which will increase the production still more within the next few months.

The increase in natural gasoline production has gone forward month by month, as new plants have been built and more gas has become available for processing, in spite of the fact that crude production in the Panhandle has been declining for more than a year. It is now less than half as much as at its peak.

In June, 1926, natural gasoline production of the Panhandle fields averaged about 30,000 gallons per day. By December the production was up to 182,000 gallons per day from 21 plants. In 1927 manufacturers built 17 more plants and in December were producing 226,800 gallons per day from 38 plants.

At the present time three plants are shut down in the Panhandle and 33 plants are producing approximately 295,000 gallons per day. The Calotex Gasoline Co. is building a 15-million foot plant in Gray county and the Amarillo Oil Co. is building a plant in Moore county.

In Hutchinson county the Phillips Petroleum Co. is building two plants and has another proposed plant on its schedule. In the SE quarter of Sec. 22, Block Y, A. & B. survey, Phillips is buiding a 60,000,000 cubic foot absorption plant, to operate on well pressure. The plant is being constructed along unique lines for such a large plant, being entirely without compressors. The plant will be known as the Rock Creek plant.

In the south 320 acres of Sec. 83, Block 46 of the H. & T. C. Survey, Phillips is building a 25,000,000 cubic foot plant to be known as its Sanford plant. It will have ten 165 horsepower compressors at the outset. A 35,000,000 cubic foot plant has been proposed for erection by the company in Sec. 3 of the D. & S. E. Survey, Block B 2.

These three plants, when completed, will have an aggregate gas capacity of 120,000,000 cubic feet. At the present time Phillips has eight plants in the district with a total gas capacity of 227,000,000 cubic feet per day, producing approximately 150,000 gallons of gasoline per day. With the addition of its building and proposed plants the company will have a gas capacity of 347,000,000 cubic feet per day and a production in the district of more than 200,000 gallons per day.

The Skelly Oil Co., with seven plants in operation in the Panhandle, is the second largest manufacturer in the field. Its plants have a total gas capacity of about 123,000,000 cubic feet per day and are producing approximately 60,000 gallons of gasoline per day.

An accompanying table shows the gasoline plants in the field in detail with their gas capacity and current production.

Census of Plants in Texas Panhandle

Hutchinson County

Company	Plant Location	Type	Capacity Millions of Cu. Ft. Per Day	Current Production Gasl. per Day
Associated Prod.	SE-19 M & C Blk Y	Port.	6.0	2700
Coyle-McGuire	SE 11 M & C Blk Y	Abs.	24.0	S.D.
Cockrell-McIlroy	SW 14 M & C Blk Y	Port.	4.0	2100
Dixon Creek Oil Co.	NW 11 M & C Blk Y	Abs.	20.0	7500
Empire Oil & Rfg. Co.	NE 19 M & C Blk Y	Charc.	6.0	3000
Federal Gasoline Co.	SE 13 M & C Blk Y	Abs.	5.0	3500
Marland Refining Co.	NE 20 M & C Blk Y	Ans.	14.0	5500
Phillips Petroleum Co. Borger Plant	SE 21 A & B Blk Y	Abs.	50.0	35000
Canadian plant	SE 1 H & OB RR	Abs.	24.0	20000
Johnson plant	S 69 H & TC Blk 46	Abs.	50.0	35000
Pantex plant	Tract 8M. Whitney	Abs.	50.0	44000
Centerfield plant	SW 10 M & C Blk Y	Charc.	8.0	S.D.
Twin Six plant	SW 5 M & C Blk Y	Abs.	10.0	See Pantex plant
Rock Creek plant	SE 22 A & B Blk Y	Abs.	60.0	Bldg
Sanford plant	S 83 H&TC Blk 46	Abs.	25.0	Bldg.
Philip McIlroy plant	3 D&SE RR Blk B2	Abs.	35.0	Proposed
Skelly Oil Co.	D & SE B-4	Abs.	20.0	
Cunningham plant	S/2 2			All Skelly plants
Johnson plant	NW 20 M&C Blk Y	Charc.	20.0	35000
Lenix plant	SW 11 M&C Blk Y	Charc.	12.0	
McMan plant	NE 5 M & C Blk Y	Charc.	8.0	
Skiatex plant	SE 6 M & C Blk Y	Abs.	15.0	
Ralph-Baker	NW 10 M & C Blk Y	Abs.	10.0	2600
Union Gas Co.	NW 8 M & C. Blk Y	Abs.	5.0	S.D.

Total Hutchinson County: 2 plants building, 3 shut down, 17 operating. Current production 195,900 gallons per day.

Potter County

Cannon Gasoline Co.	SW 159 AB&M Blk 2	Abs.	30.0	2500

Carson County

Company	Plant Location	Type	Capacity Millions of Cu. Ft. Per Day	Current Production Gasl. per Day
Marland Refining Co.	NE 116 I & GN Blk 5	Abs.	8.00	280
Phillips Petroleum Co. Panhandle plant	SW 113 I & GN Blk 5	Abs. Charc	25.0	All Phillips plants:
Carson plant	W½ 115 I & GN Blk 5		10.0	14500
Booster plant	S½ 107 I&GN Blk 5	Charc.	8.0	
Roxana Petroleum Corp.	SE 107 I&GN Blk 4	Abs.	15.0	7200
Skelly Oil Co.	SE 88 I&GN Blk 4	Abs.	40.0	25000
Skelly Oil Co.	NW 86 I&GN Blk 4	Charc.	8.0	See above

Total Carson county 7 plants producing 49,500 gallons per day.

Moore County

Amarillo Oil Co.	NE 33 Blk PMC	Abs.		Bldg.

Gray County

Atlantic Oil Prod Co.	NW 83 I&GN Blk 3	Abs.	10.0	....
Calotex Gasoline Co.	Tract 3 B&B Sur.	Abs.	15.0	Bldg.
Empire Oil & Rfg. Co.	NW 152 I&GN Blk 3	Abs.	6.0	4660
Magnolia Petroleum Corp.	NE 82 I&GN Blk 3	Abs.	12.0	2500
Roxana Petroleum Corp.	SW 83 I&GN Blk 3	Abs.	12.0	11000
Wilcox Oil & Gas Co.	SW 62 I&GN Blk 3	Abs.	12.0	5000

Total Gray County: 1 plant bldg., 5 plants operating, producing 23,160 gallons per day.

Wheeler County

Columbian Gasoline Co.	SE 46 H&GN Blk 17	Abs.	40.0	8000
Magnolia Petrol. Corp.	NE 39 H&GN Blk 24	Abs.	12.0	1600
Phelps Gasoline Co.	SE 41 H&GN Blk 24	Abs.	12.0	5000

Total Gray County 3 plants producing 14,600 gallons per day.

HUGHES TOOLS
have "KEPT FAITH" with the industry

WHEN the original Hughes Rock Bit was first introduced to the oil industry, nearly twenty years ago, operators, contractors and drillers realized that it was a product of unusual merit in that it broadened the use and economies of the Rotary Method of Drilling.

The performance of this Bit quickly earned for it a reputation for dependability, speed and safety, and testified to the high quality material and expert workmanship that had entered into its manufacture.

As the years went by, other Hughes Products were designed and perfected to meet the problems of the industry. Each product has met with the approval of the oil fraternity, for only after complete laboratory and field tests had "proven" its practicability and performance was it offered for sale.

Hughes Tools are representative of the Hughes Tool Company organization—an organization dedicated to serving a great industry.

HUGHES TOOLS

Sold by Supply Stores Everywhere

—HUGHES—

Rock Bits
Core Bits
Disc Bits
Tool Joints
Drilling Valves
X'mas Tree Fittings
RefineryValves and Fittings
Triplex Reamers
Milling Tools
Soaking Drum Cleaners, etc.

better than a written guarantee for performance

HUGHES TOOL COMPANY

Export Office
Woolworth Bldg.
New York City

Main Office and Plant
Houston, Texas

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Why More Than 3,000 Owners Prefer Rotary Lift to Pits or Racks

Attracts motorists by its clean, business-like appearance.

Provides free access with clear visibility to all service points.

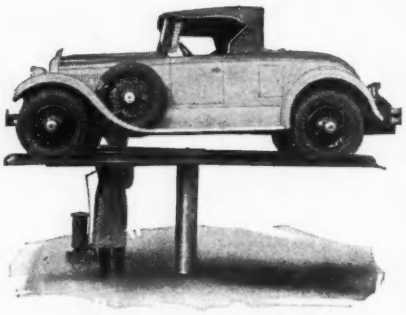
Eliminates the hazards of driving over pits or on and off racks.

Saves time for both the attendants and the motorist.

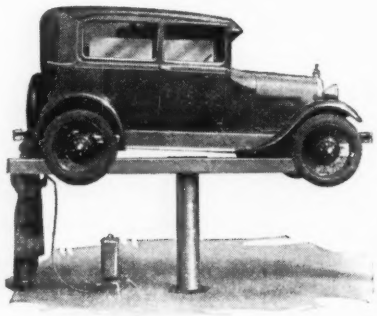
Turns an otherwise unpleasant and inconvenient job into a pleasant, profitable service.

Let us tell you more about Rotary Lift service. There is no obligation. Write today.

Automobile Rotary Lift Co.
MEMPHIS, TENN.



ROTARY "DRIVE-ON" LIFT
Designed Especially for Lubrication Service



ROTARY "CHASSIS" LIFT
Designed for Repairing, Tire Service, Washing, Etc.

FIVE YEAR GUARANTEE

YOUNGSTOWN Tanks are positively guaranteed to be tight and to remain so after being put in service. They are guaranteed against defective workmanship or material. We will replace any tank that may prove defective and we will repair free of cost any tank that may develop a leak through fault of ours within FIVE years.

Bulletin No. 15 describes our entire line.

The Youngstown Boiler & Tank Co.
Youngstown, Ohio

Offices in Principal Cities

Youngstown TANKS "KEENE STANDARDIZED MADE"

H. H. Willock Smells Oil on Pacific

CLEVELAND, June 9.—Harry H. Willock, formerly president of the Waverly Oil Works Co., Pittsburgh, who retired from active business about two years ago to travel, has been visiting in the last six months a lot of countries contiguous to the Pacific ocean. He is expected home late this month.

Enroute from Singapore to Manila March 31, Mr. Willock wrote to NATIONAL PETROLEUM NEWS:

"I hope you are steering the oil trade in proper fashion while I am away. I sailed from New York Nov. 12 and have been on the jump ever since, seeing something of Colombia, Panama, Nicaragua, Salvador, Guatemala, California, Hawaii, Samoa, Fiji, New Zealand, Australia, Java, and Straights Settlements and hope to see a little of Manila, China and Japan before I sail for Frisco from Yokohoma May 2.

"I though it might interest you to tell you a bit about a little oil I saw at Miri, Borneo, where we put in on the 28th for fuel oil. We lay there all day but the oil people allow no one to land. I suppose they are fraid some one will find out something. Nevertheless, I picked up a little dope as follows:

"North Borneo is one of the unfederated Malay states under the beneficent guidance of our mother country Great Britain. Miri and adjacent territory is under the rule of the Rajah of Sarawak, a half caste Englishman whose father or grandfather was a romantic sort of a glorified beach-comber who did some successful fighting for the last native sultan or rajah, married a native Dyak woman and fell heir to the rajah job.

"The present Rajah was educated in Britain, has a British wife, spends a considerable portion of his time in Britain distributing the graft from his loyal Dyak subjects, and on the whole lives the life of a true British aristocrat working hard—at sport.

"The field is operated by the Sarawak Oil Fields, Ltd., one of the Shell group under the Asiatic Petroleum Co., who pay the Rajah 60 cents a ton (about 7 barrels) royalty. The field was located about 1910 from seepages. A total of about 450 wells have been drilled since and present production is about 14,000 barrels a day. The refinery is only a skimming plant. There are no docks and the only shipments can be made in bulk to vessels tied to buoys over a mile off shore through 6 or 8-inch pipes on the bottom with the ends buoyed and fished up for each delivery

"I could find out nothing definite about grade of crude but the fuel oil we took on was a fine green oil about 23 Be. gravity. The price was

A Pump that Can't Go Wrong!

QUALITY TOKHEIM

CUT 660

HAND OPERATED

10 GAL. Visible gasoline pump

Because it can be operated only the RIGHT way

Four easy operations, each in its turn. Fill the glass cylinder, set for quantity desired, meter and deliver the gas.

CENTRALIZED CONTROL

Exclusive, skilfully designed series of interlocks compels the orderly completion of each operation before the next operation is possible. And yet—like everything that's fundamentally right—it is simplicity itself to operate.

METER

Records *mechanically*, by the descent of the pre-determined quantity discharge tube — not by the flow of liquid.

These are only two of a score of *exclusive* features that will make Cut 660 the Ace of gasoline pumps for years to come.

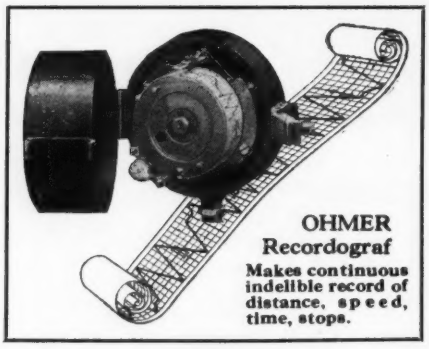
Write for Bulletin and price.

TOKHEIM OIL TANK AND PUMP COMPANY
FORT WAYNE, INDIANA

QUALITY TOKHEIM
VISIBLE GASOLINE PUMPS

Cut 660 Hand Operated

How Far?
How Fast?
How Long?



OHMER Recordograf
Makes continuous indelible record of distance, speed, time, stops.

How Profitable?

WHETHER you have one truck or a whole fleet, there are certain questions you want answered. And the Ohmer Recordograf will give you the answers—at a glance. It produces a composite graphic record of *time* and *travel*. On a specially ruled tape every detail of the vehicle's operation is accurately and indelibly recorded—number of stops, distance traveled, speed of travel and idle time.

OHMER Odometer
May be placed under hood, on instrument board, on frame, or wherever wanted. Large figures snap into full position.

Control Your Profits!

With all this information at hand, it becomes a simple matter to analyze costs and profits per mile and per hour —to correct objectionable practices— to increase management efficiency and profits from operation.

OHMER Hub-Odometer
Replaces hub housing of any car or truck. Figures always right side up.

Let Us Help You

We have developed various practical, proven systems of keeping commercial vehicle accounts. Get your experience on this subject. We will be glad to give you the benefit of it. Just pin the coupon below to your letterhead and drop it in the mail. Better do it *now*, while you are thinking about it. We will give your inquiry prompt, expert attention.

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Dept. I DAYTON, OHIO

Send us further information about the operation and installation of the OHMER Recordograf.

Pin this to your letterhead

51 shillings per 2240 pounds or about 4½ cents a gallon. Looks as if the British-Dutch was a wise combination. Price would have been 56 shillings at Singapore.

"The drilling is done by rotary, about 2000 feet deep, with American drillers. There are about 200 white men at Miri, some with their wives. Chinese do all semi-skilled work with Dyaks or Borneo natives as laborers. The company controls the town absolutely as it is on their leased land and contains no people except their employes.

"A charcoal absorption plant is operated, making about 150 barrels of gasoline a day. I do not know what charcoal is used, wood or cocoanut shell.

"Three other fields are located within a radius of 30 or 40 miles and I understand there are several other operations in North Borneo.

"This dope is in no way actual fact but was the best gossip I could pick up and I thought might be of some interest to you.

"Hope you are well and happy and the NEWS going strong. Remember me to all my friends."

The Ohio Steel Foundry Co., Springfield, O., has recently announced a new return bend. This return bend is being manufactured under the name of the Ohiolock frictionless. The Springfield plant of the company is devoted almost entirely to the production of pressure castings such as return bends, valve bodies, cylinders and castings of similar nature.

The Ohiolock return bend was introduced to the refining industry some time ago. It was developed to meet the needs of a modern plant and the design completely eliminates the threaded plug type of closure and at the same time cuts the tube cleaning cost, it is claimed.

* * *

Pacific Copper and Brass Works, Los Angeles, has brought out the Pacific junction box designed for high pressure cracking stills. Advantages claimed for this box are: a perfect flow channel, quick assembly and takedown and leakproof boxes. They are made from electric steel castings of an alloy claimed to have high tensile and ductile qualities.

* * *

The Correct Measure Co. has put on the market a new one-gallon utility pump designed for farms, grocery stores, truck fleet business, small garages and so on. Another new feature of this company's business is a new type automatic counter for its pumps, which allows keeping an accurate check on the number of gallons sold. The company has also perfected the C-Flo, a visible gauge, for use with piston type pumps.

Gasoline Stocks Today a Month's Supply Last Year Two Months'

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, June 9

PETROLEUM statistics of the Bureau of Mines for April show a shrinkage of eight days' supply in the above-ground stocks of crude and refined oils—a decline from 235.7 to 227.7 days—although crude oil stocks continued to rise.

Supplies of gasoline shrank and the stocks held by refiners April 30 represented only 29½ days' supply at the April rate of demand, although the April output of motor fuel was the largest in the history of the industry. In the year from April 30, 1927, to April 30, 1928, refiners' reserves of gasoline dwindled just a month when expressed in terms of days' supply based on current rates of foreign and domestic demand.

Although stocks of crude oil were increased 68,894,000 barrels in the year, when expressed in terms of days' supply, they represented only one day's requirements more than stocks April 30, 1927.

While these may be looked upon as bullish factors, they show need for caution by the industry in its operations, because, with present refining facilities, the gasoline "apple cart" may be easily kicked over if refiners try to learn how large a volume of gasoline they may produce and ignore the current needs of consumers.

Crude Oil

Production of crude oil averaged 2,404,300 barrels daily in April, or 16,200 barrels average less than the March production, revised figures for which show 2,420,500 barrels daily average. The original figures for March showed a daily average of 2,402,100 barrels. The daily average production in April, 1927, was 2,405,700 barrels.

Oklahoma average production in April was 20,000 barrels less than March production. Inland Texas production rose more than 27,000 barrels daily average. California average production fell more than 7000 barrels. Illinois production fell almost 5000 barrels daily average. Wyoming was down 3000 barrels daily average. Changes elsewhere were minor.

Production in all fields in the first four months of 1928 was only 301,000 barrels more than the production in the corresponding months of 1927. This was a gain of only 0.11 per cent. Production was lower this year in all but the Appalachian and Mid-Continent fields. The former showed a gain of 128,000 barrels, or 1.31 per cent, and the latter a gain of 7,699,000 barrels, or 4.56 per cent.

Stocks of crude oil continued to pile up in the Mid-Continent. There was a small gain in supplies of foreign crude oil at Gulf and Atlantic ports but in the rest of the country there was little change except a decline of 881,000 barrels in stocks of California refinable crude.

Total crude stocks April 30 were 484,632,000 barrels, a gain of 1,771,000 barrels in April, and a gain of 68,894,000 over stocks of April 30, 1927.

In the first four months of 1928, 1,305,000 barrels of California crude were moved to Gulf and Atlantic ports, compared with 2,254,000 barrels in the first four months of 1927.

Imports of crude were down 32,100 barrels daily average in April from

Petroleum Supply and Demand — Barrels

	Apr. 1928	*Mar. 1928	Feb. 1928	Apr. 1927
Domestic Crude production: Light	64,796,000	66,468,000	60,076,000	63,227,000
Heavy	7,331,000	8,569,000	7,983,000	9,363,000
Imports of crude oil	5,661,000	6,845,000	6,036,000	4,063,000
Imports of refined oil	1,680,000	1,135,000	1,054,000	1,201,000
Natural gasoline produced	3,469,000	3,426,000	3,279,000	3,172,000
Benzol used in blending	229,000	238,000	217,000	216,000
Total new supply of all oils	83,166,000	86,681,000	78,645,000	81,242,000
Total stocks end of preceding month	609,561,000	603,376,000	596,302,000	544,483,000
Total supply of all oils	692,727,000	689,485,000	674,540,000	625,725,000
Exports of crude oil	1,303,000	1,530,000	1,243,000	1,171,000
Exports of refined oil	11,813,000	11,247,000	9,578,000	9,917,000
Domestic demand, crude and refined	67,582,000	67,451,000	60,373,000	62,011,000
Total demand	80,698,000	80,228,000	71,194,000	73,099,000
Total stocks of all oils end of month	612,674,000	610,206,000	603,753,000	552,626,000
Days' supply	227.7	235.7	245.7	226.7
Increase in stocks	2,468,000	6,453,000	7,541,000	8,112,000
Daily average new supply	2,772,000	2,796,000	2,712,000	2,708,000
Daily average demand	2,690,000	2,588,000	2,455,000	2,437,000
Daily average excess of supply	82,000	208,000	257,000	271,000
Crude stocks:				
East of California: Light	321,869,000	318,074,000	312,700,000	251,673,000
Heavy	49,710,000	50,670,000	50,640,000	46,222,000
In California: Light	18,752,000	19,633,000	20,110,000	29,460,000
Heavy	94,301,000	94,484,000	94,797,000	88,383,000
Total stocks of crude	484,632,000	482,861,000	478,247,000	415,738,000
Total stocks of refined	127,210,000	126,503,000	124,682,000	136,100,000
Stocks of natural gasoline	832,000	842,000	824,000	788,000

* Revised.

Crude Oil Production by Fields — Barrels

Fields	April Daily Avg.	*March Daily Avg.	Jan.-Apr. 1928 Total	Jan.-Apr. 1927 Total	Changes 1928 from 1927
Appalachian	83,800	85,200	9,965,000	9,837,000	+ 1.31
Lima-Indiana	4,600	4,700	539,000	622,000	—13.34
Michigan	1,200	900	127,000	136,000	— 6.62
Ill.-S. W. Ind.	18,100	22,800	2,421,000	2,596,000	— 6.75
Mid-Continent	1,491,300	1,490,700	176,533,000	168,834,000	+ 4.56
Gulf Coast	118,900	117,500	14,072,000	17,408,000	—19.16
Rocky Mountain	77,000	82,000	9,422,000	10,312,000	— 8.63
California	609,400	616,700	74,465,000	77,498,000	— 3.91
U. S. Total	2,404,300	2,420,500	287,544,000	287,243,000	+ 0.11

*Revised.

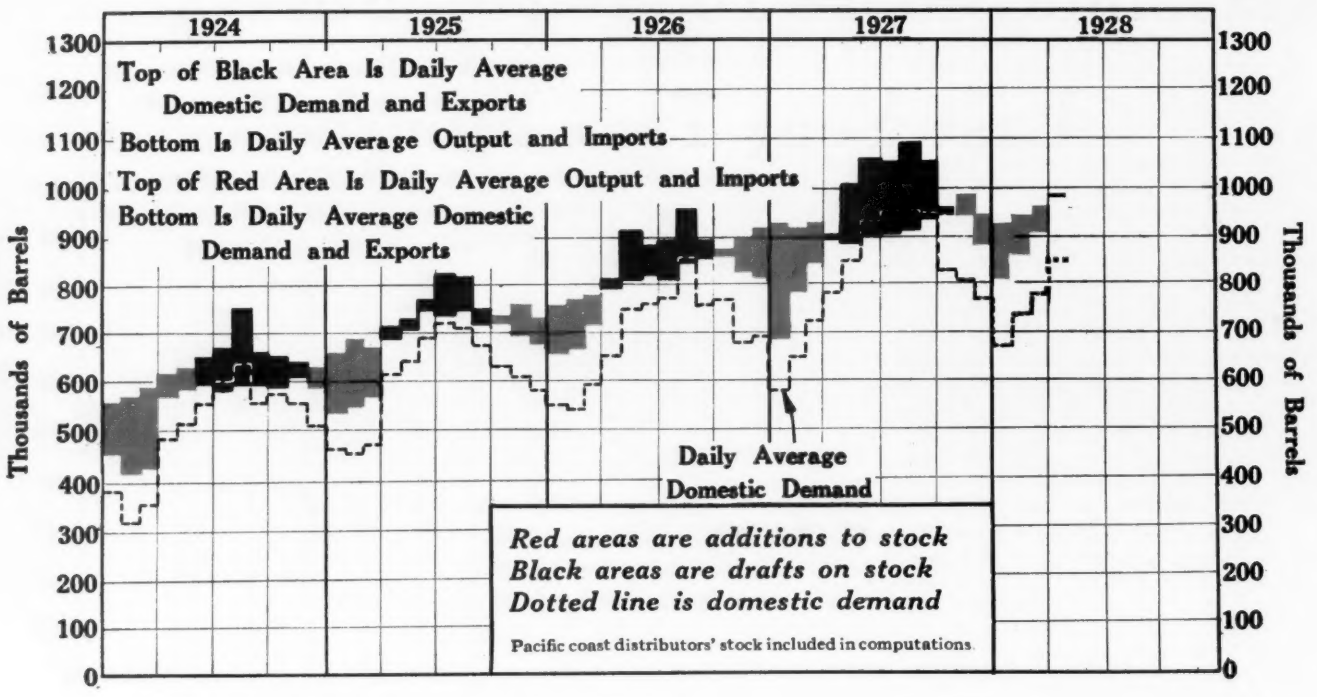
Crude Production — Barrels

(Daily Averages)

States	April 1928	*March 1928	April 1927
Arkansas	80,100	86,500	110,000
California	609,400	616,700	648,900
Colorado	7,300	8,400	10,000
Illinois	15,600	20,500	17,800
Indiana	2,800	2,500	2,200
Kansas	114,000	114,800	115,900
Kentucky	20,600	20,100	18,000
Louisiana Inland	45,000	43,000	48,300
Gulf Coast	14,000	14,200	8,000
Michigan	1,200	900	1,300
Montana	10,700	11,300	13,700
New Mexico	2,400	2,500	4,900
New York	6,500	6,400	6,100
Ohio	19,500	19,800	21,400
Oklahoma	624,400	646,200	698,300
Pennsylvania	26,200	26,900	26,800
Tennessee	100	200	100
Texas Inland	627,800	600,200	449,400
Gulf Coast	104,900	103,300	129,200
West Virginia	15,200	16,300	16,700
Wyoming	56,600	59,800	58,700
Total U. S.	2,404,300	2,420,500	2,405,700

* Revised.

Gasoline Production and Consumption



April domestic output	978,000 Bbls. daily av.	April exports	137,000 Bbls. daily av.
April imports	16,000 Bbls. daily av.	Total indicated demand	994,000 Bbls. daily av.
Total new supply	994,000 Bbls. daily av.	Stocks April 30, 1928	40,210,000 Bbls.
April domestic shipments	857,000 Bbls. daily av.	Decrease in stocks in April	19,000 Bbls.
		Stocks April 30, 1927	52,379,000 Bbls.

March imports. April daily average imports compare:

Source	April	March
Mexico	40,200	49,700
Venezuela	113,200	125,300
Colombia	26,300	38,700
Elsewhere	9,000	7,100
Total	188,700	220,800

Exports of crude averaged 43,400 barrels in April and 49,400 barrels in March.

The bureau gave these net daily averages of production in leading districts, amounts in barrels:

District	April	March
Seminole	299,000	314,000
Panhandle	71,000	72,000
West Texas	382,000	*352,000
Seal Beach	39,000	40,000
Long Beach	154,000	125,000

*Revised.

Stocks of crude oil at Seminole totaled 18,566,000 barrels April 30 and 18,772,000 barrels March 31.

Runs to Stills

Average throughput of domestic and foreign crude oil and natural gasoline was larger in April than in March. Charges of unfinished oils averaged less but charges of all oils averaged 2,629,833 barrels daily, the largest average throughput in the history of the industry. April charges of all oils exceeded the March charges, the previous record month, by 103,000 barrels daily average.

April, 1928, daily average charges to stills were 212,132 barrels more than runs in April, 1927. This was an increase of 8.7 per cent.

Crude oil charges in April averaged 2,238,300 barrels of domestic oil and 194,300 barrels of foreign oil. An average of 94,500 barrels of natural gasoline was used daily. Volume of unfinished oil rerun averaged 102,700 barrels daily. The March averages were: domestic crude 2,159,900 barrels daily; foreign crude 166,700 barrels daily; natural gasoline 87,300 barrels daily, and unfinished oils 112,900 barrels daily.

Crude Oil Stocks — By Months

(Thousands of Barrels)

1927	East of Calif.	†In Calif.	Total U. S.
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	290,110	117,454	407,564
April	297,895	117,843	415,738
May	307,016	117,432	424,448
June	315,702	117,414	433,116
July	324,930	116,996	441,926
August	333,673	115,227	448,900
September	339,741	114,981	454,722
October	345,357	113,467	458,824
November	348,885	113,746	462,631
December	351,646	111,855	463,501
1928			
January	358,892	114,820	473,712
February	362,963	114,907	477,870
March	368,744	114,117	482,861
April	371,579	113,053	484,632

†Includes heavy fuels.

Gasoline

Gasoline output was increased 3.64 per cent daily average in April over the March output. Each refining district increased production except California, where there was a curtailment in daily average output of less than 500 barrels.

Shipments were larger from all but the Rocky Mountain district. Stocks were drawn on in all but the Okla-

Daily Average Runs to Stills — All Oils — Barrels

	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky-Mt.	Calif.	Total U. S.	
January, 1927	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774	January, 1927
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571	February
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032	March
April	411,367	84,400	204,067	286,067	491,567	224,400	100,500	615,333	2,417,701	April
May	413,516	82,000	226,677	293,581	494,806	212,129	75,839	618,452	2,417,000	May
June	429,967	85,400	238,067	301,733	490,633	199,933	87,300	605,733	2,438,766	June
July	439,871	80,935	250,387	317,129	482,839	199,194	87,226	633,032	2,490,613	July
August	465,839	86,065	237,194	319,516	481,032	202,226	76,032	618,516	1,486,420	August
September	453,000	87,100	225,667	327,300	483,900	211,600	71,700	637,467	2,497,733	September
October	475,580	91,161	229,677	307,774	513,419	204,968	80,871	617,937	2,521,387	October
November	471,667	84,200	246,100	298,667	515,533	197,900	89,800	619,733	2,523,600	November
December	467,226	83,484	250,516	292,355	494,806	199,226	87,354	592,710	2,467,677	December
January, 1928	450,064	84,613	247,097	288,645	482,613	202,064	85,935	570,161	2,411,193	January, 1928
February	461,448	86,680	250,793	296,482	510,586	201,518	83,207	587,690	2,478,413	February
March	455,807	88,548	268,000	304,032	523,548	203,839	89,064	593,968	2,526,806	March
April	499,866	92,933	272,900	319,200	533,967	218,233	93,433	599,300	2,629,833	April

Semi-elliptical Heil Tanks mounted on a 5 ton A C Mack truck and Lapeer trailer. Each tank has three compartments with 800, 700 and 500 gallon capacities.

HEIL Tanks Cut Delivery Costs

Here's a real saving in delivery costs. The Lamson Oil Co. purchased a tank trailer at a comparatively small additional cost and doubled the capacity of its hauls without materially increasing the operating cost of the unit. They are hauling four thousand gallons for almost the same fixed cost as two thousand gallons. When they wish to use only the truck tank on short hauls, they disconnect the trailer.

The Lamson job should appeal to progressive oil marketers interested in getting the most for their investment in equipment. It offers, like all other Heil Tanks, the best possible advertising medium for your name and product. Heil Tanks advertise as well as carry your product.

All Heil Tanks are carefully tested and inspected before leaving the factory. Each unit is completely equipped to make its operation economical and efficient. And with each tank goes the Heil Guarantee of Quality assuring absolute satisfaction in tank construction and performance. Specify Heil on your next tank order.

1238-50 26th Avenue
MILWAUKEE, WISCONSIN

THE HEIL CO.

Manufacturers of
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The HEIL Co., 1238-50 26th Avenue, Milwaukee, Wis.

We are interested in Heil Quality-made Tanks. Size ..... ; Number of compartments ..... ;

Please send complete information.

Print Name .....

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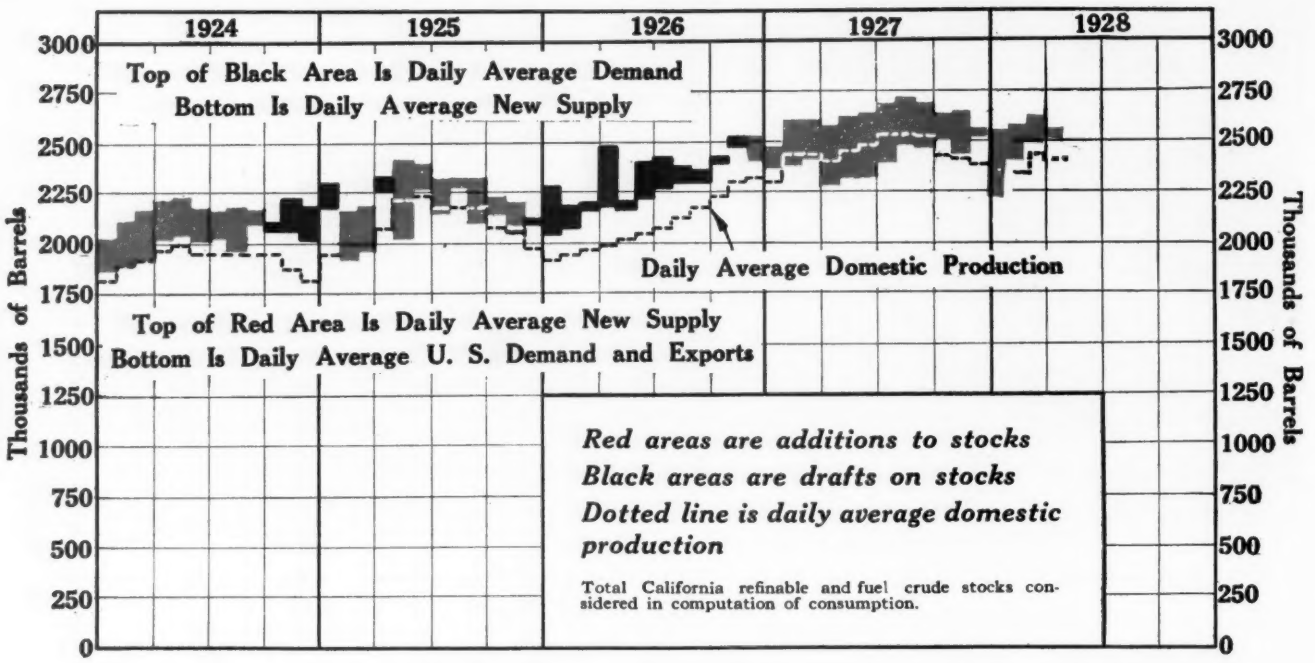
Address .....

Special Equipment Desired .....

Crude Oil Production and Demand



April domestic production	2,404,300	Bbls. daily av.	
April imports	188,700	Bbls. daily av.	
Total new supply in April	2,593,000	Bbls. daily av.	
April indicated demand east of California	1,845,700	Bbls. daily av.	
April indicated California deliveries	644,800	Bbls. daily av.	
April exports	43,400	Bbls. daily av.	
Total indicated demand in April	2,533,900	Bbls. daily av.	

Stocks in pipe lines, and at tank farms east of California, April 30, 1928	328,177,000	Bbls.
Stocks at refineries east of California	43,225,000	Bbls.
Stocks of foreign crude not at refineries	177,000	Bbls.
California stocks 20° A.P.I. and lighter	18,752,000	Bbls.
California stocks heavier than 20°	94,301,000	Bbls.
Total stocks April 30, 1928	484,632,000	Bbls.
Increase in stocks in April	1,771,000	Bbls.
Stocks April 30, 1928	415,738,000	Bbls.

homa-Kansas, Texas, and Rocky Mountain districts. No large drafts were made in any district and the accumulations did not amount to much.

Stocks of gasoline were larger April 30, 1928, than they were April 30, 1927, in only the Appalachian district. Total stocks over the year were down 12,169,000 barrels, or 23.2 per cent.

Foreign and domestic demand for gasoline in April was slightly higher than domestic output and imports, causing a draft of 19,000 barrels on stocks. Domestic output, totaling 29,332,000 barrels and averaging 978,000 barrels daily, was the largest in the history of the industry.

In terms of days' supply the April 30 stocks were 29.5 days' supply at the April rate of foreign and domestic demand. Stocks April 30, 1927, were 59.3 days' supply at the rate of demand in April, 1927. This was a reduction of approximately one month's supply over the year.

Statistics of gasoline supply and demand for the first four months of 1928 compared with data for the first four months of 1927 show these relations for this year:

1. Domestic output increased 5,784,000 barrels, or 5.3 per cent.

2. Imports decreased 141,000 barrels or 7.8 per cent.

3. Total new supply was 5,643,000 barrels greater, or 5.1 per cent.

4. Domestic demand was 9,683,000 barrels more or 11.7 per cent.

5. Export demand was 1,247,000

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000
April	26,577,000	377,000	3,614,000	23,371,000	52,379,000
Total Four Months	107,447,000	1,806,000	13,934,000	82,145,000	52,379,000
May	26,787,000	490,000	4,468,000	26,579,000	48,609,000
June	26,616,000	590,000	4,248,000	27,799,000	43,768,000
July	28,118,000	190,000	3,223,000	29,784,000	39,069,000
August	28,010,000	348,000	4,193,000	29,779,000	33,455,000
September	27,716,000	515,000	3,539,000	28,409,000	29,738,000
October	28,903,000	365,000	3,959,000	25,497,000	29,550,000
November	28,558,000	417,000	3,724,000	24,400,000	30,401,000
December	28,512,000	282,000	3,154,000	23,718,000	32,323,000
1927 Total	330,667,000	5,003,000	44,442,000	297,928,000	.....
January, 1928	27,879,000	562,000	3,713,000	20,939,000	36,112,000
February	26,775,000	372,000	3,341,000	21,136,000	38,782,000
March	29,245,000	259,000	4,016,000	24,041,000	40,229,000
April	29,332,000	472,000	4,111,000	25,712,000	40,210,000
Total Four Months	113,231,000	1,665,000	15,181,000	91,828,000	40,210,000

Stocks of Crude Oil

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels

AT REFINERIES	April 1928	*March 1928	April 1927
East Coast	7,897	8,553	7,464
Domestic	7,897	8,553	7,464
Foreign	5,571	5,058	2,782
Appalachian	2,166	2,060	1,648
Indiana, Illinois, etc	3,148	3,015	2,545
Oklahoma, Kansas, etc.	5,889	5,759	3,922
Texas Inland	1,558	1,665	1,173
Texas Gulf Coast:			
Domestic	8,132	7,868	8,220
Foreign	243	383	323
Ark. and Inland La.	684	654	408
Louisiana Gulf Coast:			
Domestic	5,343	5,859	6,788
Foreign	1,053	1,080	832
Rocky Mountain	1,541	1,655	1,380
U. S. East of Calif.	43,225	43,609	37,485
AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES			
Appalachian	5,955	6,181	6,597
Kentucky	1,208	1,121	1,212
Lima-Indiana	1,196	1,210	731
Ill., S. W. Indiana	12,217	12,208	11,762
Okla., Kans., Tex. except coastal	237,477	234,531	167,175
N. La.-Ark.	26,201	25,677	27,558
Gulf Coast	16,630	16,779	17,955
Rocky Mountain	27,293	27,304	26,972
East of Calif. pipe line tank farm stocks	328,177	325,011	259,962
Foreign Crude:			
Atlantic Ports	123	79	109
Gulf Ports	54	45	339
Total refinery, pipe line and tank farm stocks east of Calif.	371,579	368,744	297,895
California:			
20° and lighter	18,752	19,633	29,460
Heavier than 20°	94,301	94,484	88,383
Grand total	484,632	482,861	415,738
CLASSIFICATION BY GRAVITY			
Elsewhere than at refineries east of California:			
24° and lighter	321,869	318,074	251,673
Heavier than 24°	49,710	50,670	46,222

*Revised.

Gasoline Situation by Districts — Barrels

Districts	April Daily Avg. Output	March Daily Avg. Output	April Change %	April Daily Avg. Shipments	March Daily Avg. Shipments	April Change %	Stocks April 1928	Stocks March 1928	Stocks April 1927	Districts
East Coast	137,432	133,806	+ 2.71	146,100	108,806	+34.27	6,841,000	7,101,000	11,166,000	East Coast
Appalachian	42,333	38,967	+ 8.64	44,400	39,742	+11.72	1,290,000	1,352,000	1,246,000	Appalachian
Ind., Ill., etc.	135,000	130,323	+ 3.59	138,667	119,355	+16.18	5,507,000	5,617,000	5,690,000	Ind., Ill., etc.
Okla., Kans., etc.	160,100	153,451	+ 4.33	155,500	153,258	+ 1.46	4,198,000	4,060,000	4,595,000	Okla., Kans. etc.
Texas	219,300	210,323	+ 4.26	210,633	209,419	+ 0.58	5,908,000	5,648,000	7,331,000	Texas
La. & Ark.	72,200	67,710	+ 6.63	73,367	69,097	+ 6.18	1,690,000	1,725,000	3,649,000	La. & Ark.
Rocky Mount.	44,900	41,904	+ 7.15	42,067	42,838	— 1.80	2,199,000	2,114,000	5,204,000	Rocky Mount.
California	166,467	166,903	— 0.26	167,633	154,193	+ 8.71	12,577,000	12,612,000	13,498,000	California
U. S. Total	977,732	943,387	+ 3.64	978,367	896,708	+ 9.10	40,210,000	40,229,000	52,379,000	U. S. Total
Texas Gulf Coast	173,100	152,968	+13.16	160,733	168,258	— 4.47	5,113,000	4,742,000	6,473,000	Texas Gulf Coast
La. Gulf Coast	54,800	52,161	+ 5.06	55,933	52,871	+ 5.79	1,583,000	1,617,000	3,507,000	La. Gulf Coast

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production Apr. (net)	Daily Avg. Production Mar. (net)	Stocks End of April	Stocks End of March	Motor Fuel Blends Made in Apr.	Motor Fuel Blends Made in Mar.	Stocks of Blends End of Apr.	Stocks of Blends End of Mar.	Districts
Appalachian	7,380	7,757	119,500	114,000	8,381	6,900	6,095	6,047	Appalachian
Ind., Ill., etc.	1,032	1,075	13,095	10,200	1,333	1,428	405	595	Ind., Ill., etc.
Okla., Kans., etc.	42,698	40,476	404,928	398,500	114,643	108,000	18,309	13,333	Okla., Kans., etc.
Texas	21,746	20,737	197,619	234,000	18,619	20,905	3,595	3,238	Texas
Louisiana & Ark.	5,714	5,530	36,309	40,500	11,666	16,762	286	1,976	Louisiana & Ark.
Rocky Mountain	2,936	2,918	14,452	11,400	.....	.....	2,000	2,000	Rocky Mountain
Total east of Calif.	81,506	78,493	785,903	808,600	154,642	153,995	30,690	27,189	Total east of Calif.
California	34,126	32,027	46,000	33,200	not available	.....	47	.....	California
U. S. Total	115,632	110,520	831,903	841,800	.....	.....	30,737	.....	U. S. Total

barrels more, or 8.9 per cent.

6. Total demand was 10,930,000 barrels more, or 11.3 per cent.

In April 59 per cent of the gasoline produced was straight run, 31 per cent cracked and 10 per cent natural gasoline. In March the percentages were 58, 33 and 9, respectively.

Shipments of California gasoline to eastern ports of the United States amounted to 1,150,000 barrels in April, compared with 1,182,000 barrels in March. In the first four months of this year shipments of California gasoline eastward totaled 4,314,000 barrels, compared with 3,328,000 barrels in the corresponding time last year.

Natural Gasoline—Blends

Daily average production of natural gasoline was increased 5112 barrels daily average in April over March average production. Stocks for the whole country was lowered 10,103 barrels.

Production fell in April in only the Appalachian and Central States fields. Stocks of natural gasoline were lowered in only the Texas and Louisiana-Arkansas fields.

Manufacture of natural gasoline-naphtha motor fuels averaged slightly more in April than in March. Stocks of this class of motor fuel rose 3000 barrels.

Kerosene

Refiners made a wider cut for kerosene in April than in March. Although average crude oil runs were only 4.07 per cent larger in April

Kerosene Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	5,113,000	.....	1,616,000	3,882,000	8,190,000
February	4,453,000	1,000	1,399,000	2,590,000	8,655,000
March	4,802,000	3,000	1,351,000	3,356,000	8,753,000
April	4,608,000	1,000	1,861,000	2,776,000	8,725,000
Total Four Months	18,976,000	5,000	6,227,000	12,604,000	8,725,000
May	4,663,000	1,000	1,633,000	3,188,000	8,568,000
June	4,308,000	2,000	1,616,000	2,695,000	8,567,000
July	4,484,000	.....	1,376,000	2,637,000	9,038,000
August	4,420,000	4,000	1,700,000	3,389,000	8,373,000
September	4,686,000	.....	1,659,000	3,280,000	8,120,000
October	4,884,000	1,000	2,211,000	3,469,000	7,325,000
November	4,824,000	27,000	1,821,000	2,514,000	7,841,000
December	4,869,000	15,000	1,237,000	3,819,000	7,669,000
1927 Total	56,114,000	55,000	19,480,000	37,595,000	.....
January, 1928	5,047,000	46,000	2,350,000	2,742,000	7,670,000
February	4,783,000	11,000	1,551,000	3,221,000	7,692,000
March	4,717,000	6,000	1,852,000	2,737,000	7,826,000
April	5,033,000	20,000	1,912,000	3,234,000	7,733,000
Total Four Months	19,580,000	83,000	7,665,000	11,934,000	7,733,000

Kerosene Situation by Districts — Barrels

Districts	April Daily Avg. Output	March Daily Avg. Output	April Change %	April Daily Avg. Shipments	March Daily Avg. Shipments	April Change %	Stocks April 1928	Stocks March 1928	Stocks April 1927	Districts
East Coast	26,433	21,742	+21.57	29,600	18,032	+64.15	1,497,000	1,592,000	1,621,000	East Coast
Appalachian	10,067	9,290	+ 8.36	10,600	9,484	+11.77	269,000	285,000	294,000	Appalachian
Ind., Ill., etc.	16,000	16,484	— 2.93	18,167	17,806	+ 2.03	811,000	876,000	774,000	Ind., Ill., etc.
Okla., Kans., etc.	30,533	26,871	+13.62	31,833	32,161	— 1.03	486,000	525,000	603,000	Okla., Kans. etc.
Texas	35,433	36,322	— 2.45	30,667	32,322	— 5.12	1,636,000	1,493,000	1,773,000	Texas
La. & Ark.	15,966	15,322	+ 4.20	12,133	12,484	— 2.81	1,227,000	1,112,000	1,396,000	La. & Ark.
Rocky Mount.	5,166	4,968	+ 3.98	5,800	7,064	—17.89	295,000	314,000	446,000	Rocky Mount.
California	28,167	21,161	+33.10	32,067	18,484	+73.48	1,512,000	1,629,000	1,818,000	California
U. S. Total	167,765	152,160	+10.25	170,867	147,837	+15.58	7,733,000	7,826,000	8,725,000	U. S. Total
Texas Gulf Coast	28,167	28,419	— 0.88	23,033	24,193	— 4.79	1,553,000	1,399,000	1,289,000	Texas Gulf Coast
La. Gulf Coast	14,267	13,806	+ 3.34	10,433	10,806	— 3.45	1,214,000	1,099,000	1,352,000	La. Gulf Coast

Lubricants Situation by Districts — Barrels

Districts	April Daily Avg. Output	March Daily Avg. Output	April Change %	April Daily Avg. Shipments	March Daily Avg. Shipments	April Change %	Stocks April 1928	Stocks March 1928	Stocks April 1927	Districts
East Coast	33,367	29,968	+11.34	39,267	26,903	+45.96	2,866,000	3,043,000	2,821,000	East Coast
Appalachian	14,200	13,387	+ 6.07	13,533	14,129	— 4.22	1,086,000	1,066,000	984,000	Appalachian
Ind., Ill., etc.	10,900	11,064	— 1.48	13,333	11,839	+12.62	841,000	914,000	720,000	Ind., Ill., etc.
Okla., Kans., etc.	8,067	7,097	+13.67	8,800	7,452	+18.09	543,000	565,000	452,000	Okla., Kans. etc.
Texas	22,267	21,580	+ 3.18	24,967	17,935	+39.21	1,662,000	1,743,000	2,026,000	Texas
La. & Ark.	2,533	968	+161.67	2,667	1,322	+101.73	115,000	119,000	128,000	La. & Ark.
Rocky Mount.	1,633	1,935	—15.60	1,933	2,355	+17.92	130,000	139,000	125,000	Rocky Mount.
California	7,900	7,710	+ 2.46	9,500	9,194	+ 3.33	775,000	823,000	920,000	California
U. S. Total	100,867	93,709	+ 7.64	114,000	91,129	+25.10	8,018,000	8,412,000	8,176,000	U. S. Total
Texas Gulf Coast	21,167	20,645	+ 2.53	24,133	17,097	+41.15	1,586,000	1,675,000	1,995,000	Texas Gulf Coast
La. Gulf Coast	2,467	968	+154.85	2,667	1,322	+101.74	113,000	119,000	128,000	La. Gulf Coast

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	39,287,000	2,367,000	January, 1927
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000	February
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000	March
April	88,404	318,529	273,767	219,502	561,000	1,410,000	1,978,000	38,095,000	2,237,000	April
May	87,900	329,400	319,000	222,500	599,000	1,368,000	1,809,000	37,760,000	2,599,000	May
June	95,300	293,100	347,100	232,400	677,000	1,180,000	2,283,000	38,192,000	2,487,000	June
July	90,400	305,800	334,700	214,100	747,000	928,000	2,490,000	39,647,000	2,516,000	July
August	94,800	303,600	339,500	192,200	743,000	879,000	1,955,000	38,711,000	2,598,000	August
September	97,500	313,500	333,100	176,300	634,000	863,000	1,811,000	36,962,000	2,453,000	September
October	101,600	331,300	332,600	189,400	663,000	960,000	1,977,000	35,874,000	2,405,000	October
November	102,300	349,200	290,000	196,200	606,000	1,120,000	2,121,000	35,209,000	2,145,000	November
December	107,800	345,100	262,600	220,800	593,000	1,221,000	2,435,000	35,314,000	2,062,000	December
1927 Total	1,145,183	.....	3,418,541	.....	7,405,000	.....	26,473,000	.....	28,329,000	1927 Total
January, 1928	103,000	330,400	198,900	209,300	613,000	1,176,000	2,297,000	35,777,000	2,128,000	January, 1928
February	100,000	337,000	208,500	230,300	635,000	1,297,000	2,201,000	35,972,000	1,969,000	February
March	107,200	352,400	270,000	268,700	661,000	1,527,000	2,247,000	35,545,000	2,258,000	March
April	109,400	342,100	273,900	273,700	656,000	1,601,000	2,473,000	36,404,000	2,223,000	April

and gasoline output was only 3.64 per cent larger, April kerosene output exceeded March kerosene output by 10.25 per cent.

Kerosene production which was still under the production in many previous months, was less in April than in March in only the Indiana-Illinois and Texas districts. Average April shipments were larger than March shipments from the East Coast, Appalachian, Indiana-Illinois, and California districts.

Kerosene stocks were smaller April 30 than a year before in all but the Indiana-Illinois district.

Domestic kerosene output in the first four months of 1928 was 604,000 barrels, or 3.2 per cent, more than in the corresponding months of 1927. Imports were trivial each year. Export demand was 1,438,000 barrels more this year, or 23.1 per cent. Domestic demand was 670,000 barrels less this year, or 5.3 per cent. Total demand was 768,000 barrels, 4.1 per cent, larger this year than last.

Stocks of kerosene April 30 were 992,000 barrels, or 12.8 per cent, smaller than stocks April 30, 1927.

Lubricating Oils

Output of lubricating oils was increased 7.64 per cent daily average in April over March. Domestic and foreign demand was larger and stocks were lowered 394,000 barrels.

Only the Indiana-Illinois and Rocky Mountain refining districts curtailed lubricant output in April. Average April shipments were larger than March shipments from all but the Indiana-Illinois district. Stocks were lowered in all but the Appalachian district. Stocks April 30 were larger than stocks April 30, 1927, in all districts except California and Texas.

Production of lubricating oils in the first four months of 1928—11,317,000 barrels was 1,033,000 barrels, or 10 per cent, more than output in the first four months of 1927. Imports were inconsequential, not as much as 1000 barrels having come into the country in the four months ended April 30.

Exports of lubes, totaling 3,671,000 barrels, in the four months this year were 529,000 barrels, or 16.8 per cent, more than in the corresponding time last year. Domestic demand at 6,773,-

Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	2,570,000	1,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	†1,000	895,000	2,334,000	8,035,000
April	2,615,000	1,000	763,000	1,712,000	8,176,000
Total Four Months	10,284,000	3,000	3,142,000	6,773,000	8,176,000
May	2,625,000	1,000	863,000	1,928,000	8,011,000
June	2,571,000	1,000	758,000	2,197,000	7,628,000
July	2,672,000	.....	993,000	1,811,000	7,496,000
August	2,752,000	1,000	754,000	2,004,000	7,491,000
September	2,782,000	.....	861,000	1,965,000	7,447,000
October	2,757,000	1,000	839,000	1,782,000	7,584,000
November	2,477,000	.....	798,000	1,739,000	7,524,000
December	2,801,000	.....	802,000	1,663,000	7,860,000
1927 Total	31,721,000	7,000	9,810,000	21,634,000	.....
January, 1928	2,658,000	.....	934,000	1,606,000	7,978,000
February	2,728,000	.....	841,000	1,533,000	8,332,000
March	2,905,000	.....	837,000	1,988,000	8,412,000
April	3,026,000	.....	1,059,000	2,362,000	8,018,000
Total Four Months	11,317,000	.....	3,671,000	7,489,000	8,018,000

Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000
April	31,856,000	805,000	3,325,000	.....	*23,732,000
Total Four Months	127,354,000	3,043,000	14,526,000	.....	*23,732,000
May	33,499,000	826,000	4,544,000	.....	*26,059,000
June	31,691,000	851,000	4,278,000	.....	*26,590,000
July	33,693,000	849,000	4,047,000	.....	*28,890,000
August	34,098,000	391,000	4,639,000	.....	*30,346,000
September	32,339,000	341,000	3,258,000	.....	*31,631,000
October	34,045,000	667,000	4,206,000	.....	*33,191,000
November	32,594,000	704,000	4,013,000	.....	*33,637,000
December	33,029,000	451,000	3,828,000	.....	*31,982,000
1927 Total	392,342,000	8,123,000	47,339,000	.....	.....
January, 1928	32,271,000	553,000	4,175,000	.....	*29,623,000
February	30,944,000	666,000	3,420,000	.....	*29,011,000
March	34,071,000	848,000	3,969,000	.....	*29,170,000
April	33,857,000	1,176,000	4,211,000	.....	*29,499,000
Total Four Months	131,143,000	3,243,000	15,775,000	.....	*29,499,000

*These stocks for east of California only.

Gas and Fuel Situation by Districts — Barrels

Districts	April Daily Avg. Output	March Daily Avg. Output	April Change %	April Daily Avg. Shipments	March Daily Avg. Shipments	April Change %	Stocks April 1928	Stocks March 1928	Stocks April 1927	Districts
East Coast	255,933	224,742	+13.88	281,167	239,968	+17.17	8,657,000	9,414,000	6,587,000	East Coast
Appalachian	17,200	18,742	— 8.23	16,833	16,290	+ 3.33	940,000	929,000	835,000	Appalachian
Ind., Ill., etc.	83,200	84,451	— 1.48	78,300	78,677	— 0.48	1,369,000	1,222,000	961,000	Ind., Ill., etc.
Okla., Kans., etc.	96,733	95,677	+ 1.10	92,700	94,968	— 2.39	4,569,000	4,448,000	4,473,000	Okla., Kans. etc.
Texas	207,667	208,451	— 0.37	199,433	208,129	— 4.18	8,056,000	7,809,000	7,870,000	Texas
La. & Ark.	87,533	79,258	+10.44	73,800	69,516	+ 6.16	4,979,000	4,567,000	2,508,000	La. & Ark.
Rocky Mount.	20,833	20,387	+ 2.19	15,900	19,032	—16.46	929,000	781,000	498,000	Rocky Mount.
California	359,467	367,355	— 2.15	.....	.....	.....	.....	.....	.....	California
U. S. Total	1,128,567	1,099,064	+ 2.68	1,117,600	1,093,935	+ 2.16	29,499,000	29,170,000	23,732,000	U. S. Total
Texas Gulf Coast	219,700	155,032	+41.71	211,033	154,484	+66.60	6,515,000	6,255,000	6,658,000	Texas Gulf Coast
La. Gulf Coast	50,467	42,387	+19.06	39,033	31,710	+23.09	4,298,000	3,955,000	1,915,000	La. Gulf Coast

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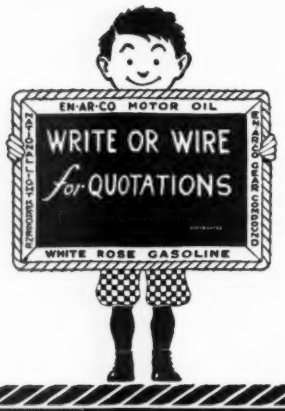

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Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000
April	48,917,000	1,505,000	25,421,000	15,322,000	211,019,000
Total Four Months	204,038,000	4,923,000	106,477,000	76,796,000	211,019,000
May	46,267,000	729,000	25,228,000	25,458,000	207,329,000
June	44,938,000	400,000	24,200,000	29,659,000	198,808,000
July	47,979,000	2,789,000	25,970,000	32,105,000	191,501,000
August	41,576,000	2,656,000	34,229,000	20,859,000	180,645,000
September	47,888,000	3,040,000	31,780,000	29,621,000	170,172,000
October	49,476,000	887,000	28,342,000	21,826,000	170,367,000
November	48,146,000	3,132,000	32,541,000	17,404,000	171,700,000
December	54,039,000	1,906,000	30,569,000	29,862,000	167,214,000
1927 Total	584,347,000	20,462,000	339,336,000	283,590,000	.....
January, 1928	55,320,000	1,117,000	39,712,000	15,039,000	168,900,000
February	49,068,000	1,337,000	38,036,000	15,025,000	166,244,000
March	50,207,000	1,767,000	40,147,000	41,606,000	136,465,000
April	58,042,000	2,996,000	34,122,000	36,825,000	126,556,000
Total Four Months	212,637,000	7,217,000	152,017,000	108,495,000	126,556,000

000 barrels was 716,000 barrels, or 10.5 per cent, more.

Total demand was 1,245,000 barrels, or 12.5 per cent, more this year than last. Stocks of lubes were 158,000 barrels, or 1.9 per cent, less April 30, 1928, than a year before.

Gas and Fuel Oil

Production, imports and exports of gas and fuel oils were slightly larger in the first four months of 1928 than in the first four months of 1927. Domestic demand, at least east of California, has been lighter this year. Stocks east of the Pacific coast rose 5,767,000 barrels.

Output of gas and fuel oils was larger in April than in March but slightly smaller in relation to crude runs than March output when the increased runs to stills in April are considered. Average output in April was slightly higher than the January, 1928, average, when crude oil charges were more than 200,000 barrels daily average less.

Output was increased in the East Coast, Oklahoma-Kansas, Louisiana-Arkansas, and Rocky Mountain districts. Shipments were larger than March shipments from the East Coast, Appalachian and Louisiana-Arkansas districts. Stocks were lowered in only the East Coast district. Fuel and gas oil stocks were larger in every refining district east of California April 30, 1928, than on April 30, 1927.

Paraffin Wax

Paraffin wax production in April was 58,042,000 pounds, the largest output in any month since the bureau began to compile wax statistics in January, 1918. The previous record was 56,135,000 pounds produced in May, 1926.

The bureau's figures clearly show why wax prices have advanced this spring. In the first four months of 1928 domestic production was 212,637,000 pounds, or only 2.7 per cent, more than production in the corresponding months of 1927. Imports rose this year and the total new supply was 219,854,000 pounds. This total was 10,893,000 pounds more than the new supply in the first four months of 1927, or 5.2 per cent.

Exports this year, 152,017,000 pounds, were 45,540,000 pounds or 42.7 per cent more than export demand last year. Domestic demand was 108,495,000 pounds this year, or a gain of 31,699,000 pounds or 41.2 per cent. The total demand was 77,239,000 pounds or 42.1 per cent more than total demand last year.

Stocks of wax at refineries fell from 211,019,000 pounds April 30, 1927, to 126,556,000 pounds, April 30, 1928, a decline of 84,463,000 pounds, or 40 per cent. Stocks April 30, 1928, were the lowest since the end of February, 1926.

There was a decline in both foreign and domestic demand in April from March, but stocks were lowered 9,909,000 pounds in April. April output and April 30 and March 31 stocks of wax were distributed among the refining districts as follows, amounts in thousands of pounds:

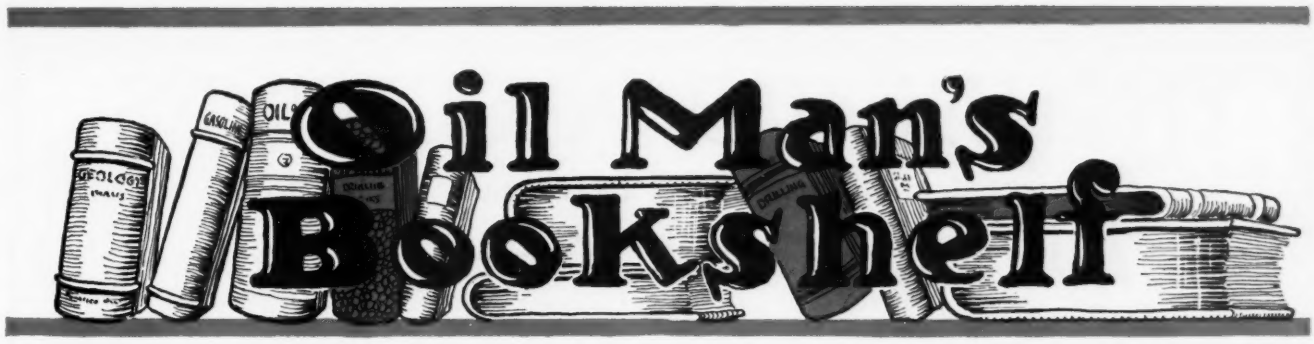
	Output	Stocks Apr. 30	Stocks Mar. 31
East Coast	21,908	39,066	45,177
Appalachian	8,347	19,245	19,794
Indiana-Ill.	7,378	19,153	18,527
Oklahoma-Kans.	4,226	2,614	2,222
Texas	6,348	8,349	7,387
Louisiana-Ark.	5,757	25,923	30,850
Rocky Mountain	4,078	12,206	12,492

Refinery Credit Men Meet In Chicago Nov. 4

CHICAGO, June 9.—The petroleum refiners' division of the National Association of Credit Men is arranging a convention in Chicago Nov. 4, 5 and 6. E. B. Moran, 38 S. Clark St., Chicago, division manager of the N.A.C.M., is secretary-manager of the petroleum refiners' division but the division's headquarters are at 401 Commercial Bldg., Tulsa.

The refiners' division is a credit information agency but not a rating agency. It is devoted entirely to the service of oil companies selling in carload lots. It makes credit reports, mostly of ledger experience, to refiners on jobbers and carload buyers generally. Approximately one-third of the members are Group 3 refiners.

Control of the organization's workings are in the hands of the N.A.C.M., but the policies of the petroleum refiners' division are directed by a board of governors composed of credit managers for refining companies.



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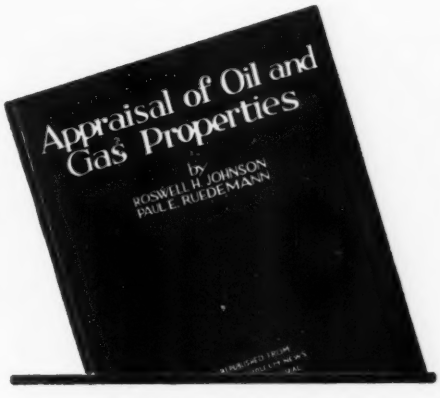

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INDEX TO ARTICLES

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Baker, Charles Laurence — **305.112.1**

" Panuco Oil Field, Mexico"

Bulletin of American Association of Petroleum Geologists, Vol. 12, No. 4, April, 1928, p. 395-441.

This comprehensive paper deals with the geology, structure and oil occurrence in a district which produced roundly 500,000,000 barrels of crude from 1910-1926, inclusive. The producing area is described as comprising about 300 square miles, generally divided into five sections: Panuco proper and Topila on the south, and Ebano, Cacalillao and Corcovado on the north. An additional area of 200 square miles on the north contains many seepages and two producing wells were developed on the Altamira hacienda in 1926. Discussions in the paper range from depositional history and rock deformations through the subjects of origin and accumulation of oil. Drilling and production methods are dealt with and water encroachments taken into account.

Halbert, Ward K. — **961.12**

"Getting the Trade of the Cash Customer, He's Small, but Rates A-1"

National Petroleum News, May 23, 1928, p. 74-76

This article describes the policy of the George C. Peterson Co., Chicago, in operating its service stations to cater particularly to the individual motorist who pays cash for his purchases and is offered no price concession as an inducement to maintain his trade at one particular company's stations. The methods are set forth by which the company trains its station men to appeal to this individual, cash-paying class of trade.

Truesdell, Paul — **749.**

"Cutting Costs in Steam Raising, in Distillation and Filtering" Article 1

National Petroleum News, May 2, 1928, pp. 17-18.

This is a description of a new boiler plant installed at a Pennsylvania refinery, with data on the savings effected thereby.

Turner, R. D. — **771.**

"Irregularities in Density, Rate of Flow Problems in Wet Gas Measurement"

National Petroleum News, May 2, 1928, pp. 27-28.

Discussion of measuring wet gas through meters and problems pertaining thereto, which was delivered before students in the southwestern gas meter course at the University of Oklahoma. The author, who is with the Skelly Oil Co., Tulsa, states that air tests should be made at least once a day. At plants where very high vacuum is employed the tests should be more frequent.

Stafford, R. B. — **963.2**

"How Car Lubrication Service Adds to Profits of Oil Companies"

National Petroleum News, May 23, 1928, p. 19-20

Three factors are cited as controlling the profitableness of the car greasing business—carrying satisfactory products, thorough service and adequate advertising. Experience of various companies in building up greasing business as a part of their gasoline station operations is given. Sales arguments to induce motorists to have their cars greased more frequently are set forth.

Beckwith, H. T. — **305.111.32**

"Geology of Osage county"

Oklahoma Geological Survey, Bulletin 40-T, February, 1928, 63 p., 30 cents.

It has been several years since the United States Geological Survey published its comprehensive report on Osage county, Okla. This bulletin by Beckwith is much briefer but contains information not in the U. S. G. S. report, for example, a description of the Burbank pool, developed since the government survey report was published. The report is profusely illustrated with maps of the various pools, an oil and gas map of the county and a geological map of the county.

Chatfield, J. C. — **772.1**

"Unit Plan Allows Changes in Gasoline Plant Without Shutdown" Article 2

National Petroleum News, April 25, 1928, pp. 81-82.

Further description and discussion of the gasoline plant of the Roxana Petroleum Corp. in Logan county, Okla.

Refinery - Tank Wagon Markets

National Petroleum News

Mid-Continent Gasolines Rise Further; Prices of Naturals Rally

Staff Special

EXPORTERS were active in the Mid-Continent again this week. A fair quantity of gasoline was purchased in Oklahoma and Texas. Gasolines for domestic use were in good demand all week and prices advanced. Goods, however, could be obtained more easily at the middle of the week and later because refiners were more caught up on shipments than at the beginning.

Natural gasolines were the most active commodities in the market, the price rally to heavy buying being from 0.75 to 1.25 cents a gallon. June 9 all grades, regardless of whether they were sweet or sour, were in good demand. Sellers reported only a limited volume was available. One manufacturer estimated that in less than two weeks between 700 and 800 cars of natural gasoline had been purchased in Oklahoma and Texas.

There was not much kerosene buying. Prices went down fractionally in Texas, but elsewhere in the Mid-Continent prices were steady.

Prices of gas oils were unchanged although several buyers reported the middle of the week that goods were offered more freely. Distillate prices were unchanged although demand was light.

Fuel oils continued to be the slowest products in the market and prices were reduced in Oklahoma. Heavy oils in Oklahoma and Texas reached the 65-cent level. Some fuel was reported June 8 moving out of north Texas at 60 cents a barrel to resale agents.

Wax continued to be scarce and refiners' ideas of prices rose toward the end of the week. Some wax has been sold over June at 4.25 cents to be moved in tank cars. Buyers seeking July requirements were unable to find quotations.

Gasolines

Exporters confined activity to 64-66, 375 e.p. gasoline, purchasing more than 1,000,000 gallons in Oklahoma at 8 cents and 750,000 gallons in Texas at 8.125 cents. This buying helped to absorb goods that were being offered on the spot market since refiners were catching up with contract shipments. One large exporter inquired for 58-60, U. S. Motor in Texas June 5 but his bid of 7.625 cents was lower than refiners' idea of the market and no business was placed.

With prices of U. S. Motor on the rise in Oklahoma, prices of other grades of gasoline increased. Lower gravity goods were selling June 5 at 7.125 to 7.375 cents, while June 9 sellers were having no difficulty in obtaining 7.50 cents and some sellers were getting 7.625 and 7.75 cents. One refiner said demand for the lower gravity goods was exceptionally good and that he was completely sold up, having to cover one order in the open market. Some 58-60, 450 e.p. gasoline has sold over June as high as 7.625 cents.

Prices of 64-66, 390 e.p. gasoline June 4 were 7.75 to 7.875 cents a gallon and this grade was moving June 9 mostly at 7.875 cents with some sales reported at 8 cents. Several refiners were getting 0.125 cent more for 64-66, 375 e.p. gasoline than was paid by exporters, and one or two sales have been heard as high as 8.25 cents. The price of 68-70, 350-360 e.p. gasoline advanced 0.125 cent and on June 9 refiners were able to sell at 8.25 cents. Only a few refiners are making this grade during the summer.

Prices of low gravity gasolines also were advanced in Texas with the price of 58-60 U. S. Motor at 7.75 to 7.875 cents. The 56-58, 450 e.p. gasoline was selling mostly at 7.375 cents June 9, and 58-60 450 e.p. gasoline at 7.375 to 7.50 cents. Refiners say 58-60 U. S. Motor is in good demand.

Kansas refiners advanced their prices of all gasolines. For shipment within the state, 58-60 U. S. Motor advanced to 7.875 cents after having been at 7.75 to 7.875 cents June 4. Some sales were reported late in the week at 8 cents. An 0.125 to 0.25-cent advance was made for 60-62, 400 e.p., and 64-66, 375 e.p. gasolines.

In Louisiana the price of 58-60 U. S. Motor June 9 was 8.25 cents, having been advanced from 8 cents the day before. Most refiners were well sold up.

Gasoline prices in Arkansas were unchanged from prices the previous week. Arkansas refiners are behind on shipments, they reported.

Natural Gasolines

A rapidly rising market greeted natural gasoline manufacturers June 4, and prices of A and AA which had been at 5.75 cents in the morning, jumped 0.50 cent by afternoon. The climbing prices were caused by one large buyer who purchased A and AA, and by rumors that an export buyer was trying to place orders. In addition one or two refiners bought some material. Little distinction was being made between sour and sweet gasoline and June 9 both treated and untreated A and AA were selling at 6.25 to 6.50 cents.

There was no activity in B and BB, or C June 4 and prices were unchanged over those of June 2. June 5 there was a little buying and prices of all three grades advanced 0.125 cent. June 6 around 75 cars of B and BB were sold at 5.75 cents establishing a firm market at that price. Grade C, although only a few sales were reported, moved June 6 to 5.75 cents. June 8 there was more activity in all grades with A and AA selling at 6.25 to 6.50 cents, B and BB at 5.875 to 6.125, and grade C at 5.75 cents.

Kerosenes

The kerosene picture was generally unchanged and, as the brisk season is virtually over, refiners see little chance for improvement in the immediate future. Prices in Oklahoma June 9 were 5 to 5.25 cents for 41-43 w.w. with considerable of this grade moving at 5 to 5.125. Reports were heard of some that was sold for 4.875 cents, but the volume was small. The refiner who made the sale, said it was necessary for him to move it and that he would quote nothing now under 5 cents. Several refiners who were quoting 5.25 cents June 4, had lowered their quotations by June 9, although one who was at

Refinery Markets on LightOils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices June 11	Prices June 4	Prices May 28
52-54 Naphtha	9.75 –10.50	10.00	9.75 –10.00
54-56 Naphtha	10.00 –10.50	10.00 –10.50	9.75 –10.25
58-60 U.S. Motor 437 e.p.	10.50 –11.00	10.50 –11.00	10.00 –10.50
60-62 400-410 e.p. gasoline	11.00 –11.50	11.00 –11.50	10.50 –11.00
64-66 390 e.p. gasoline	11.25 –11.50	11.25 –11.50	10.875–11.50
68-70 Str.-run gas. 350-360 e.p.	11.50 –12.25	11.50 –12.25	11.50 –12.75
OKLAHOMA			
48-50 450 e.p. naphtha	†7.25 – 7.375	†7.125– 7.25	†7.125– 7.25
50-52 450 e.p. naphtha	†7.25 – 7.375	†7.125– 7.25	†7.125– 7.25
56-58 450 e.p. gasoline	7.375	7.125– 7.25	7.125– 7.25
58-60 450 e.p. gasoline	7.50	7.25 – 7.375	7.25
64-66 390 e.p. gasoline	7.875– 8.00	7.75 – 7.875	7.625– 7.75
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.125– 8.25	8.125– 8.25
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	7.7585	7.6501	7.5449
60-62 437 e.p. gasoline	7.8750	7.7955	7.6718
60-62 400 e.p. gasoline	No sales	7.9553	7.7500
64-66 375 e.p. gasoline	8.1250	8.0625	7.8958

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	7.875	7.75 – 7.875	7.75
60-62 400 e.p. gasoline	8.00 – 8.125	8.00	7.875
64-66 375 e.p. gasoline	8.125– 8.375	8.00 – 8.125	8.00
NORTH TEXAS			
48-52 450 e.p. naphtha	†7.25	†7.25	†7.125– 7.25
56-58 450 e.p. gasoline	†7.375 – 7.50	†7.25 – 7.375	†7.25
58-60 450 e.p. gasoline	†7.50	†7.375	†7.25
58-60 U.S. Motor 437 e.p.	7.75 – 7.875	7.75	7.50 – 7.625
60-62 400 e.p. gasoline	7.875– 8.00	7.875	7.625– 7.75
64-66 390 e.p. gasoline	8.00 – 8.125	8.00	7.875
64-66 375 e.p. gasoline	8.125– 8.25	8.125– 8.25	8.00
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.25 – 8.375	8.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	8.25	8.00	8.00
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	7.625	7.50	7.50
58-60 450 e.p. gasoline	7.75	7.50 – 7.625	7.50 – 7.625
58-60 U.S. Motor 437 e.p.	8.25	8.25	8.00
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	8.00 –11.50	8.00 –12.00	8.25 –12.50
58-60 U.S. Motor 437 e.p.	10.00 –13.00	10.00 –13.00	10.00 –13.00
42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T).

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	†6.00 – 6.25	†5.75 – 6.25	†5.375– 6.00
Grade A, 72-79.9, 90% Recovery	†6.00 – 6.25	†5.75 – 6.25	†5.375– 6.00
Grade BB, 84-92, 85% Recovery	†5.75 – 6.00	†5.25 – 5.375	†5.25 – 5.50
Grade B, 76-83.9, 85% Recovery	†5.75 – 6.00	†5.25 – 5.375	†5.25 – 5.50
Grade C, 80-92, 78% Recovery	†5.75	†5.25 – 5.375	†5.125– 5.25
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	†6.00 – 6.25	†5.75 – 6.25	†5.375– 6.00
Grade A, 72-79.9, 90% Recovery	†6.00 – 6.25	†5.75 – 6.25	†5.375– 6.00
Grade BB, 84-92, 85% Recovery	†5.75 – 6.00	†5.25 – 5.375	†5.25 – 5.50
Grade B, 76-83.9, 85% Recovery	†5.75 – 6.00	†5.25 – 5.375	†5.25 – 5.50
Grade C, 80-92 78% Recovery	†5.75	†5.25 – 5.375	†5.125– 5.25
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†6.50 – 6.75	†6.25	†5.75 – 6.25
Grade BB	†6.00 – 6.25	†5.50 – 5.75	†5.50 – 5.75
Grade C	†5.75 – 6.00	†5.50 – 5.75	†5.25 – 5.50
CALIFORNIA			
75-85, 375-390 e.p. blend	7.00 – 8.00	7.50 – 8.00	8.00 – 8.50

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	†7.25 – 7.50	†7.25	†7.25

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.625– 7.25	6.75 – 7.25	6.75 – 7.25
46 w.w. kerosene	6.875– 7.50	7.00 – 7.75	7.25 – 7.75
47 w.w. kerosene	7.25 – 7.50	7.50 – 8.00	7.50 – 8.00
300 mineral seal	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
OKLAHOMA			
41-43 w.w. kerosene	5.00 – 5.125	5.00 – 5.25	5.125– 5.37
42-44 w.w. kerosene	5.375– 5.50	5.375– 5.50	5.75
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
42-44 w.w. kerosene	5.75 – 6.00	5.75 – 6.00	6.00
NORTH TEXAS			
40-42 w.w. kerosene	†4.50 – 4.625	†4.625– 4.75	†4.75 – 4.875
41-43 w.w. kerosene	†4.75 – 4.875	†4.875– 5.125	†5.00 – 5.25
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	5.75	5.75	5.75
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.50	5.75	5.875– 6.00
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

PENNSYLVANIA Vis.		(Viscosity at 70°F.)	
200 No. 3 Assoc. Filt.	33.50 –35.00	33.50 –35.00	33.50 –35.00
180 No. 3 Assoc. Filt.	31.50 –33.00	31.50 –33.00	31.50 –33.00
150 No. 3 Assoc. Filt.	27.50 –29.00	27.50 –29.00	27.50 –29.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.75 – 9.00	7.75 – 9.00	7.75 – 9.00
36 Min. Neut. 300-305 Flash	6.75 – 8.50	6.75 – 8.50	6.75 – 8.50
****OKLAHOMA** Vis. Color	(Viscosity at 100°F.)		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	9.00 –10.50	9.00 –10.50	9.00 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Unfilt. Pale	6.50 – 7.00	6.50 – 7.00	7.00 – 7.50
200—No. 3 Unfilt. Pale	9.50 –10.25	9.50 –10.25	9.50 –10.25
300—No. 3 Unfilt. Pale	10.50 –11.25	10.50 –11.25	10.50 –11.25
500—No. 3½ Unfilt. Pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
750—No. 4 Unfilt. Pale	14.50 –15.50	14.50 –15.50	14.50 –15.50
200—No. 5½ Red Oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
300—No. 5½ Red Oil	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
500—No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750—No. 6 Red Oil	12.75 –13.50	12.75 –13.50	12.75 –13.50
CALIFORNIA Vis. Color	(Viscosity at 100°F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	21.50 –24.00	21.50 –24.00	21.50 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	10.50 –11.75	10.50 –11.75	10.25 –11.75
650 Steam Refined	12.50 –15.00	12.50 –15.00	12.50 –15.00
600 Flash	16.00 –20.00	16.00 –20.00	17.00 –20.00
625 Flash	25.00 –29.00	25.00 –29.00	26.00 –29.00
600 Warren E	16.00 –17.50	16.00 –17.50	16.00 –17.50
600 Oil City E	15.50 –17.00	15.50 –17.00	15.50 –17.00
600 D Filtered	22.00 –26.00	22.00 –26.00	22.00 –26.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	34.00	31.00	31.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	32.00	29.00	29.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations

5.375 cents, continued to hold that figure as his low price and reported he was making some sales. Prices of 42-44, w.w. kerosene were unchanged at 5.375 to 5.50 cents.

The Texas market fell off a 0.25 cent to 4.75 to 4.875 cents June 9. Goods were easy to obtain. Prices of 40-42 w.w. grade were lowered and June 9 were 4.50 to 4.625 cents.

The Kansas price was unchanged at 5.50 to 5.75 cents for 41-43 w.w. and 5.75 to 6 cents for 42-44. Louisiana refiners were selling 41-43 at 5.75 cents and Arkansas sellers were obtaining the same price for their 42-44 grade.

Gas Oil and Distillate

There were no price changes in gas oil any place in the Mid-Continent. Sellers report that demand is fair.

Distillate also was unchanged with sellers reporting that few orders were received. Although the distillate season is over refiners continue to draw on storage.

Fuel Oil

Fuel oils continued to be the slowest commodities in the Mid-Continent market. In Oklahoma, low gravity fuel competing with goods moving from outside the Mid-Continent, has been forced down to 65 cents. One refiner said he had found one quotation out for 18-22 zero cold test fuel at less than 65 cents a barrel.

Texas prices were unchanged at 65 cents. The railroad buyers who came into the market during the last week and a half failed to cause an advance. Purchases were made at 70 cents a barrel for June shipment. Fuel oils in all other sections were unchanged.

Wax, Neutral Oils, Cylinder Stocks

While few sales were made only a limited amount of wax is available and refiners' ideas of prices in the market have advanced. One seller sold some goods over June in tank cars at 4.25 cents and now reports he is sold up. Another has disposed of all he had ready for spot shipment and is not quoting. Another, one who has some to offer, said his idea of the market was 4 to 4.125 cents.

Neutral oils and cylinder stocks were unchanged. Demand was reported fair.

N. Y. Gasoline is Moved Under Posted Price

CLEVELAND, June 11.—Canvass of western New York territory reveals that while the posted tank wagon price of gasoline of the Standard Oil Co. of New York is 17 cents, dealers who receive dumps of 100 or more gallons at a time pay 16 cents. Smaller accounts are paying the posted 17-cent price. Some large accounts are paying less than 16 cents in the Buffalo territory, the canvass revealed, but the bulk of dealers who are getting tank wagon deliveries, are paying 16 cents.

The official posted price was advanced to 17 cents May 18, two days after the tank wagon level in other Standard of New York districts was raised to 17 cents.

The situation in New York territory is like that in almost every other part of the country, the canvass revealed. When it is necessary to go under the posted tank wagon market to get or to hold business, the business is signed up or held.

The Buffffalo service station price for leading brands of gasoline is 19 cents.

Italo Petroleum Corp. Expanding Rapidly

LOS ANGELES, June 9.—The Italo Petroleum Corp. of America, formerly known as the Italo American, recently increased the capitalization from $5,000,000 to $10,000,000, and during the last two months has taken over several properties, making the company one of the important Independents in California.

One of the latest acquisitions was the McKeon Drilling Co. which has a daily production of about 5000 barrels from five wells in the heart of the Long Beach field, in addition to seven wells now drilling and nearing completion.

R. S. McKeon, president of the company taken over, has been appointed vice-president in charge of production and a director of the Italo company. R. B. McKeon and E. A. Thacklebury, formerly connected with the absorbed company, become officials of the new company.

The Italo company some three months ago took over the Brownmoor Oil Co. with properties at Long Beach, Inglewood and Kern County in addition to a small refinery in southern California.

The most recent acquisition was the purchase of the entire holdings of L. T. Edwards, an operator at Long Beach. Edwards owned three producing wells making about 1000 barrels each in addition to four wells drilling for the deep sand.

Magnolia Pipe Line Runs March-April

HOUSTON, May 26—Magnolia Petroleum Company, pipeline department announces from Dallas headquarters the following crude oil runs for April, which are shown in comparison with March.

	March	April
Hewitt-Graham	147,583.10	162,328.86
Healdton	256,325.55	227,649.65
Cushing	131,832.88	127,988.26
Yale	54,936.34	51,387.60
Duncan	46,788.54	41,961.29
Augusta	38,548.26	37,177.13
Walters-Beaver Creek	6,939.86	7,195.47
Burbank	87.89	84.02
Wewoka	889,544.87	834,695.33
Seminole	254,271.96	263,088.75
Total Okla.-Kans.	1,826,859.25	1,753,556.36
Archer	37,308.06	33,808.82
Burkburnett	76,937.09	74,771.10
Comanche	20,095.11	17,369.18
Electra	106,808.59	100,216.03
Corsicana Heavy	10,416.78	9,067.33
Corsicana Light	13,884.83	12,601.30
Henrietta	3,707.59	3,518.87
Iatan	34,633.51	29,177.55
Luling	373,964.71	349,458.19
Lytton Springs	58,191.15	58,107.19
Mexia-Wortham	33,677.14	31,296.68
Mirando	62,676.83	57,836.63
Olden	10,043.00	10,250.03
Panhandle	119,749.32	115,989.62
Panola	2,505.28	986.78
Stephens	10,317.22	9,034.35
Thrall	1,311.12	1,130.38
Gulf Coast	2,973.12	1,289.82
Crane-Upton	575,011.29	465,524.58
Glasscock	1,241.34	719.96
Winkler	111,096.96	83,563.06
Total Texas	1,666,550.04	1,465,717.45
Haynesville	2,716.69	2,186.04
Bull Bayou	43,532.99	42,585.22
Cotton Valley	29,233.83	27,303.40
Pine Island	45,260.28	38,307.28
Hackberry	54,296.40	37,754.34
Total Louisiana	175,040.19	148,136.28
El Dorado Light	33,028.10	29,096.56
East El Dorado	2,074.15	3,237.94
Smackover	95,582.94	73,312.79
Total Arkansas	130,685.19	105,647.29
GRAND TOTAL	3,799,134.67	3,473,057.3

OKLAHOMA — KANSAS

Report for April		Daily Averag
Runs	2,078,774	69,293
Shipments	1,849,966	61,666
TOTAL STOCK	8,229,122	.....

TEXAS

Wichita, Wilbarger, Archer		
Runs	209,904	6,997
Shipments	215,844	7,195
Petrolia		
Runs	3,519	101
Shipments	3,519	101
Eastland, Stephens		
Runs	36,654	1,222
Shipments	.....	.....

TOTAL STOCK....420,375—North Central Texas Field.

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Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

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DYESTUFFS & CHEMICALS, INCORPORATED

11th & Monroe Sts. **St. Louis, Mo.**

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices June 11	Prices June 4	Prices May 28
Per pound, New York			
122-124 white crude scale	4.25 – 4.50	4.25 – 4.50	4.00 – 4.25
124-126 white crude scale	4.25 – 4.50	4.25 – 4.50	4.00 – 4.25
OKLAHOMA			
**124-126 White Crude Scale	3.875– 4.125	3.75 – 4.00	3.75 – 4.00
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
30-34 fuel oil	4.75 – 5.125	5.00 – 5.125	5.00 – 5.125
28-32 fuel oil	4.50 – 5.00	4.50 – 5.00	4.75 – 5.00
OKLAHOMA			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, straw	†2.625– 2.75	†2.625– 2.75	†2.625– 2.75
32-36 dark gas oil	2.625	2.625	2.625
28-30 fuel oil (in bbls.)	$0.875– 0.90	$0.90 – 0.925	$0.90 – 0.95
26-28 fuel oil (in bbls.)	$0.80 – 0.825	$0.825– 0.85	$0.85 – 0.875
24-26 fuel oil (in bbls.)	**$0.725– 0.75	**$0.75	**$0.75– 0.775
22-26 fuel oil (in bbls.)	**$0.675– 0.70	**$0.70– 0.725	**$0.75
18-22 fuel oil (in bbls.)	**$0.675– 0.70	**$0.70	**$0.70– 0.725
16-18 fuel oil (in bbls.)	**$0.65 –0.675	**$0.675– 0.70	**$0.70
14-16 fuel oil (in bbls.)	**$0.65 –0.675	**$0.675– 0.70	**$0.70
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil	2.625– 2.75	2.625– 2.75	2.875
24-26 fuel oil	*$0.875– 0.90	$0.875– 0.90	*$0.90
18-22 fuel oil	*$0.75 – 0.775	$0.75 – 0.775	*$0.75– 0.80
NORTH TEXAS			
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
32-36 gas oil, cracked	2.375	2.375	2.375– 2.50
32-36 gas oil, uncracked	2.375	2.375	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.65	$0.65	$0.70

†Prices Nominal ††Only One Refiner Quoting *Quotations only

GULF COASTAL	Prices June 11	Prices June 4	Prices May 28
Fuel (in bbls.)	$1.30 –$1.35	$1.30 –$1.35	$1.30 – 1.35
Gas oil	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.875	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.80 – 0.85	$0.80 – 0.85	$0.85
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ½c to ¾c per pound less.)

Snow White	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
Lily White	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Cream White	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Blonde	‡	‡	‡
Light Amber	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
Amber	3.00	3.00	3.00
Red	2.75	2.75	2.75
Green No 5 color	†	‡	‡

‡No refiner quoting.

PETROLEUM COKE

****OKLAHOMA**

(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 – 5.00
Still run	$2.75 –$3.00	$2.75 –$3.00	$2.75 – 3.00
Breeze	$1.75 –$2.00	$1.75 –$2.00	$1.75 –$2.00

**Represents Both Sales and Quotations

Retail Price War Dominates California Market

LOS ANGELES, June 9

SALES departments of the various California companies are centering their attention on the local gasoline price situation, and not much attention is being paid to the export market. Although the retail price war came to an official end last week, Independent refiners lost around 100,000 gallons daily to major companies, and this week most Independents are attempting to recover some of this lost gallonage.

Several Independents have been offering resellers as much as 7 cents under the service station price for their business. This means that they are seeking business in Los Angeles territory at 10.50 cents, without tax, delivered at the service stations. Most of the dealers served by the Independents are retailing gasoline at prices between 16 to 18.50 cents, tax paid.

This cut price situation, insofar as the retailer is concerned, extends over most of the state, and only remote sections have been passed up by the seekers after increased gallonage at reduced prices. Consequently a large part of California's total gallonage is moving at prices less than the established and published tank wagon price.

Rumors are floating about this week that Standard of California may presently tire of the price war among the marketing companies, cut the posted service station price from 2 to 4 cents. If this should happen it would prove most costly to those companies that have given the widest margins. The company that made the greatest gain in gallonage would be the greatest loser in the long run. Margins now range from 5 to 7.50 cents under the posted service station price, some of the new contracts include a clause that the new contract would not apply if the service station price is reduced to 13.50 cents or less.

Business was exceedingly dull in export gasoline market this week, with no sales reported. Major refiners, at least two or three, are quoting 7.75 cents on U. S. Motor for export, while others remain out of the market or quote 8 cents. Con-

(*Continued on Page* 126)

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Atlantic Refining—T.w. price only of gasoline cut 2 cents, Massachusetts, Rhode Island and Connecticut, reestablishing a 2 cent differential between t.w. and s.s. prices, **June 1.** T.w. and s.s. prices had been the same since July, 1927.

Standard of New York—T.w. price of 20 cents and s.s. price of 22 cents, including 3 cent tax, at Burlington, published in accompanying tank wagon table, went into effect on May 17.

Standard of Kentucky—S.s. price only of gasoline reduced 2 cents, Savannah, to 19 cents, **June 5.** T.w. unchanged at 19 cents, including 4 cent tax.

Standard of Indiana—S.s. price only of gasoline cut 2.1 cents, Sioux City, to 17 cents, **June 1.** T.w. unchanged at 17.1 cents.

Standard of New Jersey—T.w. and s.s prices gasoline advanced 1 cent, South Carolina, June 12, making t.w. without tax 16 cents, and s.s. with 5 cent tax, 24 cents. New prices are not shown in accompanying tank wagon table, as prices in that table are those in effect on June 11.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect June 11, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	14
Baltimore, Md.	16	4	20	23	12
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	14
Danville, Va.	16	5	21	*	14
Norfolk, Va.	16	5	21	24	14
Richmond, Va.	16	5	21	24	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	16	4	20	23	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	20	15
Buffalo, N. Y.	17	0	17	19	15
Rochester, N. Y.	17	0	17	20	15
Syracuse, N. Y.	17	0	17	20	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	4	21	23	15
Burlington, Vt.	17	3	20	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*21	13
Philadelphia, Pa.	16	*	16	*21	13
Allentown, Pa.	16	*	16	*21	13
Erie, Pa.	16	*	16	*21	13
Scranton, Pa.	16	*	16	*21	13
Altoona, Pa.	16	*	16	*21	13
Dover, Del.	16	3	19	21	14
Wilmington, Del.	16	3	19	21	14
Providence, R. I.	17	2	19	21	15
Boston, Mass.	17	0	17	19	15
Springfield, Mass.	17	0	17	19	15
Worcester, Mass.	17	0	17	19	15
Hartford, Conn.	17	2	19	21	14
New Haven, Conn.	17	2	19	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	22	15.5
Catlettsburg, Ky.	15	5	20	22	15.5
Lexington, Ky.	14	5	19	21	15.5
Louisville, Ky.	14	5	19	21	14
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	15	4	19	21	14.5
Gulfport, Miss.	††16.5	4	††20.5	22.5	14
Jackson, Miss.	15	4	19	21	14.5
Natchez, Miss.	14.5	4	18.5	20.5	14
Vicksburg, Miss.	14.5	4	18.5	20.5	14
Birmingham, Ala.	17	4	21	23	16
Mobile, Ala.	17	4	21	23	15
Montgomery, Ala.*	18	4	22	24	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	23	†16.5
Macon, Ga.	17	4	21	23	†16.5
Savannah, Ga.	15	4	19	19	14.5
Jacksonville, Fla.	15	5	20	22	13.5
Miami, Fla.	17	5	22	24	15.5
Tampa, Fla.	15	5	20	22	13.5
Pensacola, Fla.	**16	5	**21	23	13.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	11.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	3	17.8	19.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	15.2	2	17.2	19.2	12.9
Duluth, Minn.	15.5	2	17.5	19.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	14.5	3	17.5	19.5	12.3
Davenport, Ia.	14.5	3	17.5	19.5	12.3
Sioux City, Ia.	14.1	3	17.1	17.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†14.9	2	16.9	18.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	11.2
Fargo, N. D.	16.9	2	18.9	20.9	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.5	3	15.5	17.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except the 1c for 50 gal. dumps.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	14	3	17	20	14.5
Pueblo, Colo.	14	3	17	20	14.5
Grand Junction, Colo.	17.5	3	20.5	23.5	18
Casper, Wyo.	15	3	18	20	13
Cheyenne, Wyo.	16	3	19	21	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Alburquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	22	12
Alexandria, La.	14	2	16	18	†14
Baton Rouge, La.	13	2	15	17	†12.5
Lake Charles, La.	14.5	2	16.5	18.5	†14
New Orleans, La.	*14.5	2	*16.5	*18.5	†14
Shreveport, La.	14.5	2	16.5	18.5	†13
Lafayette, La.	14	2	16	18	†12.5
Bristol, Tenn.	17	3	20	22	14
Chattanooga, Tenn.	16.5	3	19.5	21.5	15
Knoxville, Tenn.	17	3	20	22	15
Nashville, Tenn.	16	3	19	21	15
Memphis, Tenn.	15	3	18	20	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	14	3	17	19	14

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	18.25	12.25
McCook	15.75	2	17.75	19.75	13.75
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	3	17	18	11
Oklahoma City	13	3	16	18	11
Tulsa, Okla.	12	3	15	17	11
Fort Smith, Ark.*	15	*3	18	20	12
Little Rock, Ark.	15	5	20	22	12
Texarkana, Ark.*	13.5	*3	16.5	20.5	12
Dallas, Tex.	11	3	14	18	11
Fort Worth, Tex.	12	3	15	18	11
Houston, Tex.	11	3	14	18	15
San Antonia, Tex.	12	3	15	18	10
El Paso, Tex.	14	3	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
ONTARIO					
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	25.5	3	28.5	33	25.5
ALBERTA					
Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	21	5	26	30	22
QUEBEC					
Montreal	20.5	5	25.5	29	21
Quebec City	22.5	5	27.5	33	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	22
NOVA SCOTIA					
Halifax	22.5	5	27.5	32	22
Sydney	22.5	5	27.5	32	22
PRINCE EDWARD ISLAND					
Charlottetown	22.5	5	27.5	31	22

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c; Indiana, 2/25c; Kansas, 1/50c; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c; Missouri, 1/50c; Nebraska, 3/50 to 1/2c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 4/25c; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Foreign Buying at a Standstill In Gulf Export Market

Staff Special
NEW YORK, June 9

GULF export markets spent the week of June 4 mostly in the doldrums. With foreign buying at a standstill prices neither moved up nor down and sellers' opinions of market prices showed little variance over those held a week ago.

Several small part cargo lots of gasoline and kerosene were reported sold during the week. Additional inquiries for similar quantities were in the market. Except for one cargo of gasoline closed June 2, details of which were not generally known to the trade until Monday there were no full cargo inquiries or sales to influence the market this week.

Approximately 30,000 tons of clean tankage has been chartered for use between Gulf and Continental ports in the next three months, according to tanker reports. In the light of this, suppliers anticipate that inquiries will be forthcoming within the next week or two.

Probably a good portion of the tonnage will be used for kerosene. Stocks of this commodity abroad are said to be comparatively low. Foreign buyers soon will have to seek their requirements for next season if delivery is to be completed by early fall.

The one full cargo of gasoline classed with this week's business, although closed June 2, specified approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point goods. The cargo is for July 15 to Aug. 15 loading at the Gulf and is to consist of twice as much 64-66 as U. S. Motor. The 64-66 sold at 9.50 cents and the Motor at 8.875 cents. These prices include a fraction of a cent for financing, although this figure was reported by the seller to be less than 0.0625-cent per gallon. The deal drew considerable comment from the trade because it is the first in which U. S. Motor has sold above 8.75 cents for export since the market started advancing this year.

The supplier in the aforementioned transaction, and one other, advanced their prices for U. S. Motor gasoline to 9 cents a gallon following this sale. At least two other important suppliers at the Gulf reported all week they were willing to take on business at 8.875 cents. One large company expressed an idea of the U. S. Motor market as 8.75 cents admitting at the same time it had none available for loading before Aug. 15.

There was less difference of opinion among suppliers regarding prices for 64-66 gasoline. Most of them judged the market around 9.50 cents. One or two were asking up to 9.75 cents but said they would shade this price to get business.

It has been at least four weeks since a full cargo sale has been made which included kerosene, but sellers' ideas of price this week were without material change, the majority of them quoting 6.50 cents for prime white and 7.50 cents for water white. A small lot of kerosene, approximately 6500 barrels of prime white, sold this week for immediate lifting at 6.50 cents a gallon.

"Slightly lower prices for kerosene at the Gulf would not be surprising," one important supplier said late this week, "in view of the sloppy condition of the market in the field." No appreciable falling off in prices is expected, however, by most of the trade.

An English buyer was in the market June 8 for a part cargo, approximately 20,000 barrels, of U. S. Motor gasoline for late June and early July loading. A French buyer also was seeking about 4000 barrels of the same grade on a c.i.f. basis.

Little change was noted in gas oil and fuel oil prices. Gas oil with low sulfur content is reported extremely scarce, but lack of foreign demand accounts chiefly for prices remaining at levels they have held for nearly six months. Low gravity gas oil was quoted mostly at 3.875 to 4 cents and high gravity goods at 4 cents flat.

There was a routine demand this week for bunkers at Gulf ports and prices were steady at $0.95 a barrel in the New Orleans district and up to 15 cents a barrel higher further west on the Gulf. The cargo market was unchanged at $0.85 to $0.90 with the probability of shading the lower figure for low gravity grade C.

Gasoline and Kerosene Advancing In Eastern Market

Staff Special
NEW YORK, June 9

ADVANCING gasoline prices again were the feature of eastern domestic markets. Market prognosticators who last March said New York harbor would see an 11-cent price for U. S. Motor gasoline came pretty close to seeing their visions materialize this week.

Rising tank car prices came on the heels of tank wagon reductions a large distributor in the New England territory was reported to have made early this week. This action had somewhat of a depressing effect on the market, largely because of the wide publicity given it in the daily papers. The company reported to have made the reduction later denied dropping prices, asserting the cuts had been made by independent distributors of their goods.

The incident was soon forgotten and interest thereafter centered around a 0.5-cent boost in tank car prices. Strangely enough, the upward move got under way in New England. On June 7 all major sellers in the Boston district advanced their spot prices for U. S. Motor in tank cars to 11.25 cents, f.o.b. shipping point, with a minimum delivered price of 12.50 cents. A few sellers in the Providence district lagged behind for a day or two but by the end of the week U. S. Motor here was quoted on the same basis as in the Boston district.

Coincident with advances in New England, several large companies in New York harbor who have terminals along the Atlantic coast raised their prices 0.5-cent a gallon. Those advancing to 10.75 cents for U. S. Motor were not in the majority, however. A few of the larger refiners and several important resale agents continued to quote 10.25 cents. At least two resale agents reported they were long gasoline, a considerable portion of which they were willing to move at 10.25 before quoting higher.

At the end of the week, a 0.5-cent range prevailed for U. S. Motor gasoline at New York, Philadelphia and Baltimore. The trade in these markets was about equally divided in number at 10.25 cents and 10.75 cents.

At Norfolk and Charleston, price advances were unanimous with all sellers in these markets quoting 10.75 cents and 10.50 cents, respectively. Some sellers in the Savannah and Jacksonville markets advanced their prices 0.25-cent while others went up 0.5-cent. U. S. Motor at both points was quoted at 10 to 10.25 cents, f.o.b. terminals.

Second in importance only to the advancing gasoline markets, was a decided improvement noted in burning oil prices. Spot demand for these commodities is in keeping with the season, but in view of the relatively good position of stocks of these oils and also prices at which contracts are being placed for next season, most of the trade have advanced their prices for spot goods 0.25 to 0.5-cent.

Furnace oil at New York harbor,

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, represent majority of quotations and sales.)

	June 11	June 4	May 28
U.S. Motor gasoline, New York harbor	10.25 –10.75	10.25	10.25
U.S. Motor gasoline, Philadelphia	10.25 –10.75	10.25	10.25
U.S. Motor gasoline, Boston district	*11.25	10.50 –11.00	10.50 –11.00
U.S. Motor gasoline, Providence district	*11.25	10.50 –10.75	10.50 –10.75
U.S. Motor gasoline, Baltimore	10.75	10.25	10.25
U.S. Motor gasoline, Norfolk	10.75	10.25	10.25
U.S. Motor gasoline, Charleston	10.50	10.00	10.00
U.S. Motor gasoline, Savannah	10.00 –10.25	9.75	9.50 – 9.75
U.S. Motor gasoline, Jacksonville	10.00 –10.25	9.75	9.50 – 9.75
California U.S. Motor gasoline, New York Harbor	10.75 –11.00	10.50	10.50
California U.S. Motor gasoline, Baltimore	10.75	10.50	10.50
California U.S. Motor gasoline, Philadelphia	10.50 –10.75	10.50	10.50
Water white kerosene, New York Harbor	7.50 – 8.00	7.50 – 8.00	7.50 – 7.75
Water white kerosene, Philadelphia	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
Water white kerosene, Baltimore	8.00	8.00	7.50 – 8.00
28-34 gas oil, New York harbor	4.75 – 5.00	4.50 – 4.75	4.50 – 4.75
28-34 gas oil, Boston district	5.00 – 5.25	4.75 – 5.00	4.75 – 5.00
36-40 furnace oil, New York harbor	5.75 – 6.00	5.75	5.75
36-40 furnace oil, Boston district	6.00 – 6.50	6.00	6.00
Grade C bunker oil, New York harbor	$1.25	$1.25	$1.25
Grade C bunker oil, Boston district	$1.25	$1.25	$1.25
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 12.50c delivered.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	June 11	June 4	May 28
U. S. Motor gasoline	25.40	25.40	25.40
43-45 150 w.w. kerosene	18.40	18.40	18.40
42-44, 110 s.w. kerosene	17.40	17.40	17.40
CYLINDER OILS			
Bright stock, dark	36.50 –37.50	35.00 –36.00	34.50 –35.00
600 D filtered	30.00 –32.00	30.00 –32.00	31.00 –32.00
600 Warren E filtered	24.00 –25.00	23.50 –24.50	23.50 –24.50
600 s.r. unfiltered	17.25 –18.00	17.00 –18.00	17.00 –18.00
650 s.r. unfiltered	19.50 –21.00	19.00 –19.50	19.00 –19.50
600 flash s.r.	22.00 –25.00	21.00 –25.00	21.00 –25.00
630 flash, s.r.	33.00 –35.00	33.00 –35.00	33.00 –35.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.25	15.25	15.25
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	23.00	23.00	23.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)
WHITE CRUDE SCALE (In barrels)

	June 11	June 4	May 28
122-124 A.m.p.	4.25 – 4.50	4.25 – 4.375	4.00 – 4.25
124-126 A.m.p.	4.25 – 4.50	4.25 – 4.375	4.00 – 4.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.875– 5.00	4.75	4.50 – 4.625
125-127 A.m.p.	4.875– 5.00	4.75	4.50 – 4.625
128-130 A.m.p.	5.125– 5.25	5.00	4.75 – 4.875
130-132 A.m.p.	5.25 – 5.50	5.50	5.25 – 5.50
133-135 A.m.p.	*6.00 – 6.50	*6.00	*6.00
135-137 A.m.p.	*6.75 – 7.00	*6.75 – 7.00	6.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	4.125– 4.25	4.125	4.00

*Prices nominal.

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	June 11	June 4	May 28
U.S. Motor	8.875– 9.00	8.75 – 9.00	8.75 – 9.00
60-62, 400 e.p.	9.00	9.00	9.00
61-63, 390 e.p.	9.25	9.25	9.125– 9.25
64-66, 375 e.p.	9.50	9.50	9.375– 9.625
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.85	$1.85	$1.85

*Sales only.

KEROSENE			
44 water white	7.50	7.50	7.50
41-43 prime white	6.50	6.50	6.50
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.95 – 1.10	$0.95 – 1.10	$0.95 – 1.10
Grade C bunker oil, cargoes	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90

*Less than ½ of 1% sulfur.

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)

Heavy Panuco crude taxes to be paid	$1.02 –$1.05	$1.02 –$1.05	$1.02 –$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.15	$1.15	$1.15

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.; cold test 0) (Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
300 vis. No. 3 unfiltered pale	9.25 – 9.50	9.25 – 9.50	9.25
500 vis. No. 3½ unfiltered pale	11.50 –12.00	11.50 –12.00	11.50 –11.75
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	10.00 –10.50	10.00 –10.50	10.00
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.50 –15.50	14.50 –15.50	14.50 –15.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	June 11	June 4	May 28
Gasoline, U. S. Motor, 53-55 Gravity	7.75 – 8.00	7.75 – 8.00	7.50 – 8.00
Gasoline, U. S. Motor, blends and special cuts	8.00 – 9.00	9.00 – 9.50	9.00 – 9.50
Gas Oil, 30-34, per barrel	$1.10 –$1.20	$1.10 –$1.20	$1.10 –$1.20
Diesel Oil, 27 plus, per barrel	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.75 –$1.00	$0.75 –$1.00	$0.75 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.95	$1.80 –$2.00	$1.80 –$2.00
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.80
Bradford District Oil in National Transit Lines (Bradford District)	2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.35
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.35
Corning Grade in Buckeye Pipe Lines (Ohio)	1.55
Corning, O. heavy grade	1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	2 and above	1.76
40-40.9	1.4		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		

Mirando, Tex.	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:			
Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		
Wheeler County:			
Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		
Gray County:			
Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23, 1927

Crane, Upton, Crockett and Pecos Counties	$0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

Cotton Valley, below 36, $0.75. Rest of Cotton Valley schedule, beginning with 36-36.9 at $1.28. same as Caddo, Homer, etc.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La.	.75
†East El Dorado	1.00

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia: on Feb. 6 by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

36-40 gravity goods, was largely quoted at 6 cents a gallon this week. One or two companies offered this grade at 5.75 cents and a few small sales were reported. In the New England district, the majority of sellers quoted 6 to 6.25 cents for furnace oil. One company was asking 6.50 cents.

All 4.50-cent gas oil available in New York harbor was reported out of the way and 28-34 gravity goods was quoted at a minimum of 4.75 cents this week with several companies asking 5 cents. One large sale of industrial gas oil at 4.625 cents was reported. Domestic burning oil was not available at this price, however.

The bunker market in New York harbor was generally steady at the posted price of $1.25 a barrel. In the Marcus Hook district, bunkers were offered at $1.15 to $1.17.

N. Y. Wax Prices Climb; Foreign Buying Lags

NEW YORK, June 9.—Wax prices continued to advance this week. Foreign buying fell off slightly. A fair volume of goods changed hands but the trading in wax was confined mostly to brokers buying ahead.

Quotations for white crude scale at New York ranged from 4.25 to 4.50 cents with reports of brokers bidding 4.375 cents for July. Prices for the fully refined waxes also were advanced 0.125 to 0.25-cent a pound and demand in this section of the market was a bit more spirited than for some time past.

Fully refined wax, 123-125 A.m.p., was quoted at 4.875 to 5 cents at New York this week against 4.75 cents flat a week ago. The high melting point grades continued extremely scarce, particularly 135-137 A.m.p. which was quoted nominally at 6.75 to 7 cents a pound.

The New Orleans market also was higher and a slightly larger volume of consumer buying was reported here this week. White crude scale was quoted largely at 4.125 to 4.375 cents a pound. One refiner said he sold his last 50-ton lot of June wax at 4.375 cents. A sale of 100 tons of 125-127 A.m.p. fully refined wax at 4.625 cents a pound for delivery over June and July was reported.

New Absorption Plant

TULSA, June 11.—The Coltexo Corp., subsidiary of the Southern Carbon Co., is building a 20,000-gallon gasoline absorption plant at LeFors, Texas, 17 miles northwest of Pampa. The plant will be ready for operation early in July.

Purchasers, in All Fields (in Effect June 11)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.93	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 pegrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials **used** by refiners and compounders as effective the date shown.

	June 11	June 4
Refiners' Supplies		
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	$8.75	$8.75
Compounders' Supplies		
Vegetable Oils		
Linseed carloads, spot lb.	10.40	10.40
Tanks, spot	9.60	9.60
Soya Bean, Tanks, coast, lb.	9.50-9.75	9.75
Oleic Acid		
Distilled, tanks lb.	9.00	9.00
Distilled, bbls. lb.	9.75	9.75
Saponified, tanks lb.	9.25	9.25
Saponified, bbls. lb.	10.00	10.00
Lard Oils		
Prime Winter Strained lb.	16.25	16.25
Extra Winter Strained lb.	13.25	13.25
Extra lb.	12.75	12.75
Extra No. 1 lb.	12.25	12.25
No. 1 lb.	11.75	11.75
No. 2 lb.	11.375	11.375
Tallow oil lb.	11.625	11.625
Neatsfoot Oil		
Pure, bbls. lb.	15.75	15.75
Extra, bbls. lb.	12.50	12.50
No. 1 bbls. lb.	12.00	12.00
Cold Pressed lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed gal.	63-65	63-65
Light Pressed, tank cars, N. Y. gal.	54-56	54-56
White bleached gal.	70-71	70-71
Yellow bleached gal.	68-69	68-69
Whale, extra winter bleached, gal.	82-84	84
Naval Stores		
Steam distilled turpentine, N. Y. gal.	51	50
Steam distilled turpentine, Savannah gal.	46	45
Gum turpentine, N. Y. gal.	56	53
Gum terpentine, f.o.b. cars Savannah gal.	52	49
Wood Rosin F, N. Y. bbl.	$7.80	$7.30
Wood Rosin F, Savn'h bbl.	$7.00	$6.50
Gum Rosin B, N. Y. bbl.	$8.40	$7.55
Gum Rosin B, f.o.b. cars Savannah bbl.	$7.70	$6.80
Rosin oil, pure gal.	54	50
Rosin oil, compounded gal.	45	41
Pine Tar		
Kiln burnt bbl.	$12.50-14.00	$12.50-14.00
Retort bbl.	$13.50-15.50	$13.50-15.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	51-55	51-55

*Nominal.

Gasoline Demand Good in Chicago; Contract Shipments Are Heavy

Staff Special
CHICAGO, June 9

GASOLINES continued to hold the center of interest in the Chicago market this week. Demand was good in most quarters although several sellers said inclement weather had slowed it down somewhat. Most of the trade reported orders had not been so heavy this week as last. Orders or marginal contracts were heavy this week as the spot market price has advanced to a point where it is above the contract price in many cases.

Sales of U. S. Motor gasoline were made at 7.625 to 7.75 cents June 4 and 5 and although the bulk of goods moved thereafter at 7.75 cents, some continued to move at 7.625 cents until June 8 when all refiners and marketers in the Chicago district, reporting to PLATT'S OILGRAM, were asking 7.75 cents or more. Only two or three refiners were moving goods above 7.75 cents and the price appeared pegged at this figure. June 7 Sinclair Refining Co. announced a price advance of 0.25 cent on all grades of gasoline, making quotations on U. S. Motor 8 cents.

An item of discussion here was the possibility of a change in tank wagon price or in the Q.D.A. Spot market prices have advanced approximately 2 cents since Feb. 1 and jobbers' margins are now so small they are selling gasoline at sacrifice to their large resale customers entitled to the maximum Q.D.A. discount.

Higher gravity gasolines were quiet most of the week. Export buying has slackened, according to reports from Group 3, and domestic demand was rather light. Prices continued to hold in line with U. S. Motor. Most refiners report they are well fixed for orders and are not pushing sales of these grades.

Gasoline of 60-62, 437 e.p. sold at 7.75 to 7.875 cents all week. The 60-62, 400 e.p. grade moved at 7.875 to 8 cents June 4 and 5, at 8 cents flat June 6 and 7 and was at 8 to 8.125 cents June 8 and 9. Virtually all sales of 64-66, 375 e.p. gasoline were made at 8.25 cents June 9, with a few reported both above and below. Most sales earlier in the week were at 8.125 to 8.25 cents.

Demand for kerosene was light. Inquiries were scarce, according to most sellers, and the bulk of goods moved at prices approximately 0.25 cent under those prevailing June 2. Most sales of 41-43 w.w kerosene were at 5 to 5.125 cents up to June 8, when the bulk of goods moved at 5 cents flat. Some refiners, who were well sold up, continued to quote 5.125 and 5.25 cents. A few sales were reported at 4.875 cents on Saturday.

Little change was noted on distillate. Sales continued at prices which have been unchanged for some weeks. Virtually all sellers were getting 3 to 3.125 cents for 38-40 straw.

Gas oils were comparatively quiet. Several sellers reduced their prices 0.125 cent but the larger portion of sales continued at the old figure. The 32-36 ordinary dark gas oil opened June 4 at 2.625 cents flat and sold thereafter at 2.50 to 2.625 cents. Dark 32-36 gas oil with a zero cold test sold mostly at 2.75 cents all week after opening June 4 at 2.75 to 2.875 cents. Straw zero gas oil of 32-36 gravity continued to sell at 2.875 to 3 cents.

Demand for fuel oils was light. Prices were generally unchanged although a few sellers were willing to shade the prices shown herein. Ordinary grades of fuel oil below 24-26 gravity moved mostly at $0.70. Some sales of Oklahoma goods were reported under $0.70 but in most cases only the west Texas fuel with a high sulfur content moved under this figure. Fuel oils with a zero cold test continued to command a 5-cent premium.

The 28-30 fuel oil was at $0.90 to $0.975 June 4 and 5 and at $0.90 to $0.95 until June 9, when sales were made at $0.875 to $0.95. Fuel oils of 24-26 and 22-26 gravity were unchanged over the week at $0.75 to $0.80. The 18-22 grade was at $0.675 to $0.75 June 9 after moving at $0.70 to $0.775 previously. Sales as low as $0.65 were reported. Smackover treated fuel quotations were $0.85 to $0.90 June 4; $0.825 to $0.875 until June 9 and closed at $0.80 to $0.85.

Occasional showers during middle and closing days of next week are forecast for Standard of Indiana territory. Temperatures will be near normal most of the week throughout the territory.

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Bright Stocks Up 3 Cents In Penna. Market

CLEVELAND, June 9.—Bright stocks advanced 3 cents this week in western Pennsylvania market. Light bright was quoted June 9 at 34 cents and dark bright at 32 cents, for spot shipment. One refiner was quoting 1 cent above these prices for July. Bright stocks are scarce.

Other goods were unchanged in price. One refiner sold 58-60 U. S. Motor gasoline for first part of July at 11 cents to a broker.

Demand for gasoline continued to be reported good. Rain was reported through most of western Pennsylvania most of the week. Some refiners said weather was not affecting sales, while a few reported a slackening in demand. One refiner said his shipments for early June were better than he expected in view of buying at lower prices late last month.

Eastern Kentucky Market

ASHLAND, June 11.—No gasolines were available for spot shipment in eastern Kentucky refining district in week ended June 9. Kerosene price has declined ¼ cent over past week, and gas and fuel oil prices are down ⅛ cent. June 11 prices, f.o.b. eastern Kentucky refinery, are:

41-43 kerosene	7.00
32-36 gas oil	4.25
24-26 fuel oil	3.375
Gasolines	None available

HOUSTON, June 9.—Seasonal conditions are increasing demand for the 500 and 750 viscosity Gulf Coastal lubricants, Houston district manufacturers report. There is less demand for the lighter grades, such as 100, 200 and 300 viscosities. Prices are unchanged but it is said it is harder to get concessions.

OIL STOCKS AND FINANCES

National Petroleum News

Oil Investing Company Floats Stock Issue

CLEVELAND, June 9.—Oils Oilstocks, Ltd., a Delaware corporation formed May 1 to invest in oil company stocks, this week issued 100,000 shares of no par non-voting Class A capital stock at $12 a share. Each share carried a warrant entitling the holder to purchase an additional half share of class A stock before July 1, 1933, at $12 a share.

The corporation's authorized capital consists of 700,000 Class A shares and 300,000 Class B shares. The latter carry voting power. Both classes share equally in dividends.

With this financing, according to John L. Weeks, president, the company will have received $3,400,000 for investments. Present investments are in Atlantic Refining Co., Ohio Oil Co., Prairie Oil & Gas Co., Royal Dutch Co., Shell Union Oil Corp., Standard Oil Co. of New Jersey, Standard Oil Co. of California, The Texas Corp., Tide Water Oil Co., and Union Oil Co. of California.

Besides Mr. Weeks directors are: James H. Barr, chairman, National Supply Co.; Thomas J. Megear, Luke, Banks & Weeks; John Nickerson, John Nickerson & Co., Inc.; L. C. Pestalozzi, a Paris banker; Ernest Stauffen Jr., vice-president, New York Trust Co.; Albert E. Thiele, Guggenheim Bros., and Adolph G. Wigren, New York.

Two Frick Supply Companies Merge

CLEVELAND, June 9.—The Frick-Reid Supply Corp., which will be organized under the laws of Pennsylvania to acquire the assets of the Frick-Reid Supply Co. and Frick & Lindsay Co., suppliers of oil field equipment, has issued $3,000,000 15-year 6 per cent sinking fund gold debentures at par.

Proceeds from this issue will be applied toward the retirement of $300,000 mortgage debt of the Frick & Lindsay Co. and $3,000,000 7 per cent preferred stock of the Frick-Reid Supply Co.

The combined companies operate 48 oil field supply stores in the principal producing centers east of California. W. E. Frick will be president of the consolidated company.

Mountain Producers Association—All directors and officers re-elected.

Maracaibo Oil Exploration Co.—All directors re-elected.

Standard Oil Group Dividends Set Second Quarter Record

NEW YORK, June 9

DIVIDEND distributions to stockholders of the Standard Oil group companies for the second quarter of 1928 will aggregate $55,832,769, a new high record for any second quarter, according to Carl H. Pforzheimer & Co., specialists in Standard Oil securities. This total compares with distributions of $48,863,169 made in the first quarter of 1928 and $54,291,451 distributed in the second quarter last year.

Only twice before have the quarterly dividends exceeded the amount for the current quarter, once in the first quarter of 1927, when operations were on a more profitable basis, and in the last quarter of 1927 when extra year-end payments increased the total.

The increase in payments for the current quarter were due chiefly to special dividends declared by National Transit and Southern Pipe Line companies, amounting to $3,500,000 and $1,500,000, respectively. Semi-annual dividends and the payment made by the Vacuum Oil Co. also helped increase the total.

In the first quarter of 1928 Vacuum paid $1 a share on a capitalization of $62,809,550 of $25 par value. April 30 a 100 per cent stock dividend was paid, doubling the amount of stock on which a dividend of 75 cents a share was paid. This increased the dividend distribution of this company from $2,572,382 to $3,768,573.

All dividends for the second quarter of 1928 have been either paid or declared with the exception of Prairie Pipe Line Co. The current estimate is calculated on the basis that this company will declare a dividend of $3.50 a share on its stock, the same as in the first quarter.

The record of quarterly dividend distributions of the Standard Oil group companies during the past few years follows:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Full year
1928	$48,863,169	$55,832,769	.....	.....	.....
1927	55,873,413	54,291,615	$47,728,440	$55,804,755	$213,698,223
1926	40,580,317	50,618,451	46,427,278	62,685,548	200,327,594
1925	34,355,618	41,905,728	35,140,584	42,104,169	153,506,099

Wayne Pump Co. Formed As Holding Concern

CLEVELAND, June 9.—Wayne Pump Co., Fort Wayne, Ind., has issued $2,000,000 20-year 6 per cent sinking fund gold debenture bonds at 99½. Proceeds from the sale of this issue and preferred and common stock will be used to pay for the outstanding common stock of the Wayne Co., the service station equipment manufacturer.

The Wayne Pump Co. is a Delaware corporation, organized as a holding company.

President W. M. Griffin wrote bankers the net earnings of the Wayne Co. the last three years were: 1925, $639,262; 1926, $749,861, and 1927, $885,682.

Richfield Bonds Converted

LOS ANGELES, June 8.—President James A. Talbot of the Richfield Oil Co. has announced that more than $8,158,000 of the Richfield 6 per cent convertible bonds have been retired through conversion into common stock. He said that the entire issue amounting to $11,450,000 should be converted before the completion of the next quarterly report. All bank loans have been retired and only current obligations are outstanding.

National Transit Pays Special

CLEVELAND, June 11.—National Transit Co. has declared a special dividend of $7 a share, payable June 15 to stock of May 31 record. The regular quarterly dividend of 25 cents a share was declared, payable the same date to stock of the same record date.

Pure Oil Co.—All directors re-elected at annual meeting.

Superior Oil Corp.—Directors re-elected, Louis Allen added to board.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended June 9 Sales	First	High	Low	Last	Change
7⅜	2⅞	38	27⅛	(sh) 922,075	N.P	Amerada Corp.	50cQ	Apr. 30, 28	17,200	34¼	34¼	30	30½	— 3⅝
82½	35½	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	28,700	77⅞	77⅞	58½	58⅞	—18⅞
50¼	35	46½	37½	$56.000.000	$ 25	Associated Oil	50cQ	Mar. 31, 28	660	45¾	45¾	42	45	+ 1½
131⅝	104	139⅛	95¾	50.000.000	100	Atlantic Refining	$1Q	June 15, 28	25,900	127⅜	130½	116¾	117⅝	—12⅞
119	115½	118¼	116	20.000.000	100	do pfd	$1.75Q	May 1, 28	500	118	118	118	118	0
35½	20¾	26⅞	22⅛	28.725.675	25	Barndsdall Corp. A	.....	Feb. 6, 28	21,800	23⅝	23⅝	22	22	— 1⅛
32⅛	20½	27¼	22	799,775	25	do B	.....	Feb. 6, 28	100	23½	23½	23½	23½	+ ¾
32⅛	20	32¾	24	51,524,150	25	California Petroleum	25cQ	June 1, 28	400	32	32	29½	29½	— 1¼
96¾	65	94⅛	71¼	20,785,400	100	General Asphalt	.....	.....	37,100	87	87⅞	74½	75	—12¼
144⅞	107¼	141½	114	6,792.200	100	do pfd	$1.25Q	June 1, 28	1,400	128½	128½	116¾	117	—15
175¾	60½	167	127	25.000.000	100	Houston Oil	.....	.....	12,100	150¾	150¾	137¼	137¼	—13⅝
32¾	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	May 7, 28	15,700	27¼	27½	25	25¼	— 2¼
12⅛	7⅝	19½	9	$3,280,340	$10	Indian Refining	.....	Dec. 15, 20	17,300	18⅝	18⅞	17	17	— 1¾
12	7¼	18⅞	8⅓	4,550,110	10	do ctfs	.....	.....	22,400	18	18⅛	16¾	16⅞	— ⅝
112	99	132¾	101	2,296.400	10	do pfd	.....	Dec. 15, 21	800	132¾	*132¾	132	132⅛	— ⅜
37¾	20½	39⅛	27⅜	(sh) 3.992.122	N.P.	Lago Oil & Transport	75cQ	May 1, 28	3,500	35	35	30¼	30¼	— 4¾
18⅛	10	19¾	9⅜	(sh) 1,237.078	N.P.	Louisiana Oil Refining	.....	.....	42,200	17¾	17⅞	14⅝	14⅞	— 2⅝
97	85¼	96	80	$4.000.000	$100	do pfd	$1¾Q	May 15, 28	.....	.....	.....	.....	.....	.....
22¾	12	25½	12⅜	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	4,300	19¼	19¼	16⅛	16½	— 3¼
58½	31	44½	33	(sh) 2,316.692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	61,500	39⅜	38⅜	34¾	34½	— 4
320	200	360	255	$45,942.800	$100	Mexican Petroleum	$3Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	39	4⅛	sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	93,300	34¼	34¼	23¼	23⅜	— 8⅝
39¾	25½	33¼	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	11,500	30¾	30¾	28¾	29	— 1¾
105	97	115⅛	103¼	$6,718,000	$100	do pfd	$1.75Q	June 1, 28	1.200	114	114	114	114	0
3¾	1⅝	7⅜	2⅛	24,298,850	10	Middle States	.....	July 1, 23	37,100	5⅝	5⅞	4¾	5	— ⅝
2¾	1¼	5⅞	1½	5,501,370	10	do ctfs	.....	.....	1.200	4	4	3	3⅝	— ¼
1⅞	1	2¼	1¼	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	12.900	1½	1½	1⅜	1⅜	0
65⅞	40¼	53¾	38¼	$48.807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	2.500	47½	47	42	42½	— 5
66¾	40¼	54⅝	37¾	121.097.900	50	do B	.....	Oct. 20, 27	52,000	49	49⅜	42⅝	43¼	— 5½
37⅞	16¾	28⅜	18¼	(sh) 400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	4,300	23⅝	23⅞	19	19	— 4½
18⅞	8	21¾	11⅛	(sh) 198.770	N.P.	Panhandle P. & R.	.....	.....	8,400	18	19¾	15½	16	— 1⅞
83	54	106¼	70	$2,935,200	$100	do pfd	.....	July 2, 23	900	90	90	86	88	— 5
60¼	36¼	44⅜	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	Apr. 2, 28	29,300	39⅞	40⅝	38	38	— 2
1⅛	½	4¼	½	$29,622,925	$ 25	Pierce Oil Corp.	.....	.....	21,100	3	3⅛	2⅜	2⅜	— ⅝
24	13½	30½	16¼	15,000,000	100	do pfd	.....	Feb. 1, 22	600	23¼	23¼	23	23	— ⅛
5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	9,900	4⅝	4⅝	4	4	— ¾
33⅞	16¾	26⅞	16	$37.450,850	$50	Producers & Refiners	.....	Sept. 15, 23	88,900	22	28⅝	22	24	+ 1
50	36⅞	46⅞	41	2.845.350	50	do pfd	.....	May 1, 25	850	49⅝	49⅝	44⅛	44¼	+ ⅛
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	June 1, 28	15,100	23¼	23¾	22⅜	22¾	— ½
115½	111¾	115	108	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 28	110	119	119	114	114½	+ 1½
28⅝	25⅝	50¾	24	$29,224,894	$25	Richfield Oil	25cQ	May 1, 28	153,300	51½	52½	46⅜	46⅜	— 1⅝
54½	44¼	55	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	8.900	52¼	52¾	51	51	— 1⅜
47⅞	41⅜	47	40⅝	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	100	45	45	45	45	— ⅛
31¾	24⅜	31	23¼	(sh)10.000.000	N.P.	Shell Union Oil	35cQ	Mar. 31, 28	16.200	28⅛	28¼	26¼	26¼	— 1⅜
26¾	14¼	24¾	18½	$7.208,080	$ 10	Simms Petroleum	.....	Apr. 1, 27	12.600	22⅛	22⅜	20⅝	20⅝	— 1⅝
22⅜	15	30¼	17⅝	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	May 31, 24	153,100	26⅞	26⅞	22⅜	22½	— 4
104½	97	109½	102½	$16,604,600	$100	do pfd	$2Q	May 15, 28	100	108½	108½	108½	108½	— ½
37⅜	24½	34	25	27.396,590	25	Skelly Oil Co.	50cQ	June 15, 28	8,200	31⅞	31⅞	28¼	28½	— 3½
60⅜	50⅝	63⅞	53	(sh)13,016,434	N.P.	S. O. California	62½cQ	June 15, 28	23,400	59⅜	59½	56¾	56¾	— 2½
41⅜	35½	49	37⅜	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	June 15, 28	87,200	46⅛	46¼	42¾	42¾	— 3⅜
34½	29¾	41½	28¾	427,973,275	25	S. O. New York	40cQ	June 15, 28	92,600	36⅝	37⅛	33¼	33⅜	— 3⅛
34⅞	30	49	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	June 15, 28	29,700	44½	45½	43	43	— 2
101⅝	99	109½	100	$5,000,000	$100	do pfd	$1.50Q	June 1, 28	.....	.....	.....	.....	.....	.....
6½	3⅛	9½	2⅛	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	20.600	8⅛	8½	7¼	7¼	— ½
58	45	66⅜	50	$180,480.550	$ 25	The Texas Corp.	75cQ	Apr. 2, 28	102,600	64	64⅞	58⅛	58⅝	— 4⅞
18⅞	12	17½	12⅜	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	10.800	15½	15½	14⅛	14⅛	— ⅝
29⅛	19	27⅛	19⅜	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 28	2,800	25	25¼	24	24	— 1
90¼	85	94¼	87	$20,705,200	$100	do 5½% pfd	$1.25Q	May 15, 28	800	91¾	91¾	88	88	— 4
19⅛	15¾	20⅝	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	24.100	18	18	16¾	16¾	— 1⅛
90¾	85	90	82½	$72,745,900	$100	do pfd	$1.50Q	Apr. 2, 28	1,400	88	89	88	89	+ 2
10¼	3⅜	10⅛	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	56,500	8⅝	8⅝	7½	7⅝	— 1⅛
56½	39⅝	57	42⅝	$40,791,225	$ 25	Union Oil of California	50cQ	May 10, 28	18,400	52½	52½	49¾	50	— 2⅝
127½	94	128⅛	119¼	30,844.000	100	Union Tank Car Co.	$1.25Q	June 1, 28	300	112½	122½	121	121	— 1½
34½	24½	33½	26	(sh) 310,956	N.P.	Warner Quinlan	50cQ	Apr. 1, 28	224,100	39¾	41⅜	36½	36⅞	— ⅝
27½	20	26	20⅛	(sh) 490.000	N.P.	White Eagle Oil & Refining	25cQ	Apr. 20, 28	2.600	23⅞	23⅞	22½	22½	— 1½

*New High †New Low ‡Also extras s-Stock Total Sales 1,755,120

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended June 8 Sales	First	High	Low	Last	Change
.....	.....	4	2½	N.P.	Ark. Nat. Gas (new)	18,570	3⅜	3½	3	3⅛	— ⅜
.....	.....	7½	6¾	N.P.	†do pfd	10.007	7⅛	*7½	7⅛	7⅜	+ ¼
98¾	80⅞	114½	90¾	100	Columbia Gas	12	114½	*114½	114½	114½	+ 2½
107⅞	100	108½	108	100	do pfd	100	108½	*108½	108½	108½	+ 2½
15	7½	10	7	10	Devonian Oil	20	9	9	9	9	0
.....	.....	15	9¾	10	Dixie Gas & Util.	20	13	13	13	13	0
.....	.....	95	85	100	do pfd	.....	.....	.....	.....	.....	.....
117½	115	116	115	100	Duquesne Light pfd.	.....	.....	.....	.....	.....	.....
.....	.....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
59¾	37¼	58	48⅝	$ 25	Lone Star Gas	5,415	54	55	53	53	— 1⅜
.....	.....	36½	36½	25	Petroleum Exploration	45	36½	36½	36½	36½	0
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas.	.....	.....	.....	.....	.....	.....
8	5½	7¼	6	10	Salt Creek Cons.	400	6	6	6	6	0
26½	17	22	16¾	10	Tidal Osage	.....	.....	.....	.....	.....	.....
43	33	33¼	30½	N.P.	Waverly Oil Wks. A	100	33	33	33	33	0
.....	.....	19	19	$ 25	Wiser Oil	.....	.....	.....	.....	.....	.....

†New high

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended June 8 Sales	First	High	Low	Last	Change
.....	.....	10¼	9	10	Ark. Nat. Gas (old)	1,000	10	10	10	10	— ¼
95	88	132	132	25	Gulf Oil	.....	.....	.....	.....	.....	.....
.....	.....	115	115	....	Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	9	5½	25	Leonard Oil & Dev.	2,700	8	8	8	8	0
2.70	.30	1.00	.50	10	Omar Oil & Gas	.....	.....	.....	.....	.....	.....
2¼	1¾	.....	.....	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
31	19	22	16¾	5	Plymouth Oil	1,000	20½	20½	20	20	— ½
6	5	4¾	4½	5	States Oil	.....	.....	.....	.....	.....	.....
3⅛	1½	4½	2¼	1	Texon Oil & Land	330	4	4	4	4	0
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

*New High †New Low x Ex Dividend

Oil Company Earnings

First Quarter	1928	1927
Mexican Seaboard Oil.	*$427,254	*$517,908

Annual	1927	1926
Royal Dutch Co.	fl. 101,978,637	fl. 101,595,945

*Loss before depletion

Oil Dividends

	Amount	Payable	Stock of Record
Associated Oil	50c	June 30	June 16
Humble Oil q	30c	July 1	June 11
do extra	20c	July 1	June 11
Mountain Prod. q	65c	July 2	June 15
Salt Creek Cons. q	20c	July 2	June 15
Tide Water	20c	June 30	June 16
Phillips Pet. q	37½c	July 2	June 14
Warner Quinlan q	50c	July 2	June 15
do pfd. q	$1.62½	July 2	June 15
West Coast Oil pfd. q	$1.50	July 5	June 25

Cleveland Stock Market

June 8	Par Value	Bid	Asked	Last Sale
Canfield Oil	100	110½	115	115
do pfd	100	100	...	100
Fred G. Clark	10	4½	5	4¾
National Refining Co.	25	35½	37½	38
do pfd	100	130	135	130
Paragon Refining Co.	25	13⅛	13¼	13⅛
do pfd	100	122	125	130¾

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended June 9 Sales	First	High	Low	Last	Change
41⅜	17⅛	22⅜	17¼	£ 4,126,460	£ 1	Anglo-American Oil	60⅓c	May 31, 27	5,800	17⅜	18	†17¼	17¼	— ¼
21½	17⅝	20½	16½	.....	£ 1	do cts. non-voting	.....	.....	4,300	17	17⅞	17	17	0
3¾	¾	5	1⅛	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	1,900	3¼	3½	3	3½	+ ½
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	300	6¾	6¾	6⅝	6¾	+ ¾
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A	Apr. 16, 28	100	51	51¼	51	51¼	+ ¼
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	June 15, 28	100	66½	66½	66¼	66½	+ 1
126	76½	161	117¾	3,000,000	25	Chesebrough Mfg.	$1Q	Mar. 30, 28	.....	.....	.....	.....	.....	.....
22⅜	16¼	23	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	8,900	17⅝	17¾	16⅝	16⅝	— 1¼
137	89	114	88	3,000,000	100	Cumberland Pipe Line	‡$2Q	June 15, 28	250	100	102	99	99	— 6
68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	May 1, 28	.....	.....	.....	.....	.....	.....
13½	3½	11	5	16,000,000	100	Galena Signal Oil	.. ..	June 30, 25	.....	.....	.....	.....	.....	.....
59¾	23	39	27	4,000,000	100	do new pfd	....	June 30, 26	90	35	35	32½	32½	— 2½
60½	35½	48	35	2,000,000	100	do old pfd	.....	June 30, 26	10	45	45	45	45	0
68½	54	84¾	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Apr. 1, 28	30,300	81½	82¾	76¼	76¾	— 5
182	123¾	245	176½	20,000,000	100	Illinois Pipe Line	$6S.A	June 15, 28	500	235	235	215	224	—11
64¾	37¾	71⅞	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	†25cQ	June 1, 28	4,600	67	67½	65⅝	65⅝	— 1⅝
94½	61	89½	74⅞	$5,000,000	$ 50	Indiana Pipe Line	‡$1Q	June 15, 28	100	84	84	84	84	— 2
39	28¼	45¼	35	(sh) 17,123,444	N.P	International Petroleum	25c	Mar. 15, 28	14,300	41⅛	41⅜	38¾	39⅛	— 1⅞
24	13¼	32⅜	20½	$6,363,350	12.50	National Transit Co.	‡25cQ	June 15, 28	2,400	22⅞	23½	22	22	— 1
44½	31¼	59⅛	37½	5,000,000	100	New York Transit	.....	July 15, 26	50	57	57	57	57	+ 2
100	70	125	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	300	118	120	118	118½	+ ½
67⅛	52	68¼	58	60,000,000	25	Ohio Oil Co.	‡50cQ	June 15, 28	4,600	64⅜	64⅜	62⅛	62⅛	+ 2¼
39	12	84	29	10,000,000	25	Penn Mex. Fuel	$1 25	May 31, 28	200	48	48	48	48	0
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 28	2,000	214¾	215¼	214¼	215	+ ¾
55⅛	45⅜	56	47⅜	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	9,700	50¾	51	49⅛	49⅛	— 1⅝
201½	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	750	182	182	178	178	+ 2
27¼	15½	35⅞	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	100	31½	31½	31¼	31½	— ½
41⅛	35	53	36¾	20,00,000	25	South Penn Oil	50cQ	Mar. 31, 28	1,000	47⅞	48	45½	45½	— 2⅜
83	55⅛	100¾	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	Apr. 2, 28	150	100¾	*100¾	98¼	98¼	+ ¼
81½	64⅝	83⅜	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	June 15, 28	22,200	77¾	78¼	75⅜	75⅜	— 2
20½	14⅜	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	600	22	22⅜	21⅛	21⅛	— 1¼
130	111½	136⅛	122¼	17,012,559	25	S. O. Kentucky	$1Q	Mar. 31, 28	7,100	128	129	126	127½	— ½
49½	40	45⅞	39⅞	4,559,850	25	S. O. Nebraska	63cQ	Mar. 20, 28	800	42	42	42	42	0
87½	72	79½	71	14,000,000	25	S. O. Ohio	62½cQ	Apr 2, 28	450	75½	76	75¼	75¼	— ¼
122	117¼	125	117	7,000,000	100	do pfd	$1.75Q	June 1, 28	140	120	120	119¾	119¾	— ¼
21	14½	26	16	30,734,000	25	Swan Finch Co.	.....	Nov. 1, 19	200	22	22	22	22	— ¾
.....	.....	87⅛	75	124,941,600	25	Vacuum Oil	75cQ	May 31, 28	31,300	81½	82½	77¾	78	— 3

•New high †New low xEx dividend ‡Also extras.

New York Curb Bonds

Week Ending June 8

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	104½	101	101⅛	0
Cities Serv. 5s '66	97¾	97½	97¾	0
Cities Serv. 6s '66	104⅛	103⅞	104	0
Cities Serv. G 5½s '42	95	94½	94½	0
Cont. Oil 5¼s '37	97	96½	97	+½
Emp. O & R 5½s '42	94	93⅝	93¾	— ⅛
Galena Oil 7s '30	96¾	95	95	0
Gulf Oil 5s '37	101⅜	101⅛	101⅛	— ⅛
Gulf Oil 5s '47	102	101¼	101¼	— ¾
Indep. Oil 6s '39	102	100	100	— 2
Richfield Oil 6s '41	155	142¼	142¼	—3¾
Richfield Oil 5½s	101	100¾	100¾	0
S. O. N. Y. 6½s '33	.....	.....	.....	.....
Sun Oil 5½s '39	102	101	101¼	— ¼
Trans. Con't. Oil 7s '30	105	104¾	104⅞	— ⅛
Valvoline Oil 7s '37	106	106	106	0
Warner Quinlan 6s '42	111	108	110	+1

New York Bonds

Week Ending June 8

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102¾	102½	102½	0
Atlantic Refg. deb. 5s	102	101½	101½	+ ¼
Barnsdall Corp. 6s	103¼	100⅞	101	—2¼
Barnsdall Corp. 8s ex-war.	92¼	91⅜	91¾	— ¾
Cal. Pet. 5s	100¼	98½	98½	—1⅜
Cal. Pet. 5½s	102¾	101⅜	101	— ¼
General Asphalt 6s	111¼	109	109	—2¼
General Petroleum 5s	102	100¼	101½	— ¼
Humble Oil & Refg. 5½s	102	100⅝	100⅝	—1⅜
Humble Oil & Refg. 5s	100⅝	99¼	99¼	— ⅞
Mid-Cont. Pet. 6½s	105	105¾	105½	— ¼
Mid Cont. Pet. 6s	103¼	102¾	103⅛	— ⅛
Mid Cont. Pet. 6s	98	97	98	+1
Prod. & Refg. 8s	111¼	111¼	111¼	+ ¼
Pure Oil 5½s	99⅞	99	99	—1¼
Shell Union Oil 5s	98⅜	97½	97¾	— ¼
Simms Pet. 6s	102	101⅞	102	— ⅜
Sinclair Con. Oil 7s	102¼	101	101⅛	—1⅛
Sinclair Con. Oil 6½s	100⅛	98½	99½	— ½
Sinclair Con. Oil 6s D	99	98¼	98¼	— ¼
Sin. Con. Crude Oil 5½s	98½	97	97	—1½
Sinclair Pipeline 5s	95⅛	93⅝	93⅝	— ⅝
Skelly Oil 5½s	94	93	93	—1
S. O. N. Y. 4½s	97⅜	96⅜	96⅜	— ⅞
S. O. N. Y. deb. 5s	103¼	103	103⅛	0
Superior Oil 7s	107¾	104½	104½	—3⅞
Union Oil of Calif. 5s C.	99⅜	99⅛	99⅜	— ⅜
White Eagle 5½s	97¼	96	96½	— ½

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended June 9 Sales	First	High	Low	Last	Change
2⅞	.55	1½	.75	$ 5	Amer. Con. Oilfields	56,100	1⅛	1⅛	1	1	— ⅛
7½	2¾	6⅝	3⅛	N.P.	Amer. Maracaibo	14,900	5⅞	6	5	5	— ⅞
2¾	1	4	2¼	$ 10	Argo Oil	800	2½	2⅝	2⅝	2⅝	+ ⅛
9¾	6¾	10¼	7⅝	10	Arkansas Nat. Gas	1,000	10	10	9¾	9¾	— ¼
20½	15½	....	....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	40½	32¾	N.P.	British American	.....	.....	.....	.....	.....	.....
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	13,500	22¾	23¼	20	21⅛	— 1½
26	15⅛	....	....	....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
58¾	40¼	71¼	54	$ 20	Cities Service	68,300	70½	*71¼	69½	70⅛	— ⅝
95⅜	87	103½	94½	100	do pfd	3,100	103	103	102¼	102⅝	— ⅜
8⅞	7⅜	9⅝	8⅞	10	do pfd. B	300	9⅝	9⅝	9½	9½	— ⅛
29¼	22½	34⅝	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅛	2¼	1⅛	1	Colombia Syndicate	32,000	1½	2⅛	1⅛	1⅝	0
9¾	6⅜	8½	6½	10	Consolidated Royal	200	7	7⅜	7	7⅜	+ ⅛
14⅞	9½	17⅛	10	N.P.	Creole Syndicate	40,600	14⅞	15¼	13⅝	13⅞	— 1⅜
3	.50	3¼	.76	N.P.	Crown Central	13,400	2¾	*3¼	2¼	2¼	— ⅝
12	4	30⅛	8⅛	N.P.	Darby Petroleum	4,500	26	27	25	25	— 1
11½	4	13½	7⅞	....	do trust ctfs.	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	11⅛	7½	N.P.	do pfd	300	11⅛	*11⅛	11	11	— ⅛
3¾	1	2	1¼	N.P.	Gibson Oil	18,500	1¼	1⅜	1¼	1¼	— ⅛
2	.40	.53	.15	N.P.	Gilliland ctfs.	.....	.....	.....	.....	.....	.....
118	86¼	148½	101½	$ 25	Gulf Oil Corp.	5,600	132	135½	125	126	— 6
2½	.80	7⅞	1½	10	Intercontinent Pet.	6,700	1⅝	1⅜	1½	1⅝	0
2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	600	2	2¼	2	2¼	+ ⅛
10⅞	5⅛	9⅜	5½	N.P.	Leonard Oil & Dev.	4,200	7⅜	8	7⅛	7⅝	+ ⅛
27½	20	32⅜	20	N.P.	Lion Oil & Refg.	2,000	31½	31⅝	28¾	28½	— 3
59⅜	37	57	49	$ 25	Lone Star Gas	2,900	54	54¾	53	53½	+ ½
2⅞	.80	1⅞	.91	1	Magdalena Synd	10,000	1⅜	1½	1¼	1¼	— ⅛
21½	20¾	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	37⅝	N.P.	Margay Oil	200	39	39	38½	38½	— ½
3	1⅛	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4¾	N.P.	Mexico-Ohio Oil	300	6	6	5½	5½	— ⅜
1½	1	1½	.81	$ 1	Mountain & Gulf	1,400	87	89	81	89	+ 2
29¼	22¾	28⅝	23	10	Mountain Producers	8,800	23⅝	24⅛	23¾	24⅛	+ ⅜
5⅞	4⅝	5⅝	4¾	5	New Bradford	1,000	5	5⅛	5	5	0
6¼	4	5½	4	10	New England Fuel	100	5	5	5	5	+ ⅛
16	9¼	11⅜	8⅛	1	New Mex. & Ariz.	1,800	8½	8⅞	8⅛	8⅛	— ⅛
13⅞	9	15½	11½	25	New York Oil	100	12⅛	12⅛	12⅛	12⅛	— 3⅜
12⅜	9½	13¼	10¾	N.P.	North Cent. Texas	3,900	13	13¼	12	12½	— ½
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2⅝	N.P.	Pandem	4,200	3	3	2⅞	3	0
12⅛	7	15¼	8½	N.P.	Panapec Oil	4,800	12⅛	12⅞	11¼	11¼	— 1
9	7⅜	11⅜	10⅝	$ 25	Paragon Refg.	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp.	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5¼	10	Pennok Oil	400	6	6	6	6	0
....	....	4½	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24¾	7	14½	9	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	12⅝	4⅛	N.P.	Reiter-Foster	3,300	7¾	8⅛	7½	7½	— ½
28⅜	15	31½	22	$ 25	Richfield Oil pfd	400	24⅛	24⅜	24⅛	24⅜	— ⅛
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	600	7⅝	7¾	6⅞	6⅞	— ⅜
8	5¼	7¼	6	$ 10	Salt Creek Cons.	100	6	6	6	6	0
35½	27¼	35	27½	10	Salt Creek Prod.	2,900	27⅞	28¼	27¾	28	+ ⅛
7	1¼	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26½	17	22⅞	13	10	Tidal Osage	700	19½	19½	19⅜	19⅜	+ ¼
23¾	15	21¼	13⅛	10	do non-voting	1,600	19	19⅜	18	18½	— ½
92	63½	87	82	100	Transcontinental pfd.	.....	.....	.....	.....	.....	.....
23¼	7	47	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7⅜	4¼	6⅝	4⅞	5	Venezuelan Petrol	6,000	6	6	5⅝	5⅜	— ⅛
32⅝	19½	25	18⅞	N.P.	Wilcox Oil & Gas	200	20⅜	20⅜	19½	19½	— ⅞
8	4¾	8¼	5¾	$ 1	Woodley Petroleum	100	7¼	7¼	7¼	7¼	— ¼
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	1,600	6¾	7	5	5¼	— 1¼

•New High †New Low xEx Dividend

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Retail Price War Rules California Market

(*Continued from Page* 116)

sumption is on the increase in California and the West Coast, as summer approaches. Tourists are entering the state in great numbers.

There is nothing new in fuel export market, but the usual amount is moving in tank cars. Some of the contracts for West Coast consumption have been placed at 75 cents. One lot of fuel was offered for export this week at 73 cents without takers. A little spot fuel is moving around 70 cents.

Natural gasoline is still selling at lower prices, some spot stuff moving at a shade under 7 cents, although the spot market is holding between 7 and 8 cents. Smaller refiners are increasing the percentage of natural gasoline in their motor gasoline, thus slightly reducing the net cost per gallon, while they can get cheap natural gasoline. There are no indications that the supply of natural gasoline will decline for several weeks, certainly not until Long Beach activity eases off. The gas in this field is rich, running from 1½ to 4 gallons to the 1000 cubic feet, and every new well furnishes between 2,000,000 and 2,500,000 cubic feet of gas. Several new plants have been erected at Long Beach in the past three or four months.

Kerosene prices show no change.

Cumberland to Reduce Capital

OIL CITY, Pa., June 9.—Special stockholders' meeting has been called for July 11 when a proposal to reduce the capital stock of the Cumberland Pipe Line Co. will be voted on. The projected reduction is from $3,000,000 to $1,500,000. The company which is paying $5 a share June 15, will have on hand about $15 a share which President Forrest M. Towl says is not needed in the business and may be distributed as a special dividend.

Channing Has New Plant

TULSA, June 11.—The Canadian River Gas Co. is building a 20,000-gallon gasoline plant at Channing, Texas, on the new Amarillo-Denver gas line. The plant will be of the high pressure type operating at about 350 pounds per square inch. It will be ready for operation within the next three weeks but will not be started until the gas line is completed later in the year.

Ford, Bacon and Davis, contractors on the gas line, are assembling the plant on specifications provided by the Jackson Engineering and Equipment Co.

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Trade Mark reg. U.S. Pat. Off.
Members of Audit Bureau of Circulations and Associated Business Papers, Inc

NATIONAL PETROLEUM NEWS

Branch Offices:
LOS ANGELES
Petroleum Securities Building
TULSA.
World Building
NEW YORK
342 Madison Avenue
HOUSTON
612 West Building
CHICAGO
35 Wacker Drive

Published by the National Petroleum Publishing Co., MAIN OFFICE · 1213 W. 3rd St., Cleveland, Ohio Copyrighted 1928

Vol. XX Cleveland, Ohio, June 13, 1928 No. 24

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